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THE FUTURE OF THE MEDICAL PROFESSION.

BEING THE CAVENDISH LECTURE DELIVERED BEFORE THE WEST LONDON MEDICO-CHIRURGICAL SOCIETY ON JULY 4TH,

BY

MAJOR-GENERAL SIR BERTRAND DAWSON, G.C.V.O., C.B., M.D., F.R.C.P.,
ARMY MEDICAL SERVICE; PHYSICIAN IN ORDINARY TO H.M. THE KING; PHYSICIAN TO THE LONDON HOSPITAL.

PART I.

[AFTER thanking the Society for the honour it had done him in appointing him Cavendish lecturer, Sir Bertrand Dawson said that the subject had been selected with a view to encouraging deliberation and discussion, and from these the united action so urgently needed. The range and complexity of the subject was so great that it had not been possible to confine all he had to say within the compass of an hour, and consequently it had been arranged that he should deliver the second part of the lecture at the house of the Royal Society of Medicine on July 11th.]

The changes which have long been germinating and which are soon to see the light, are, as I conceive, the result of the following causes:

I. A growing appreciation of the fact by the profession and the public that much disease is preventable; a growing sense that health is of supreme interest alike to the state and the individual; that the best means for preserving health and curing disease should be available for (I do not say given to) every citizen, irrespective of his position, and by right and not by favour; I venture to think that this last will be an article of faith of every political party.

II. Now put, side by side with the foregoing, the fact that the growth of knowledge makes measures for preventing and curing disease more complex; that these measures are no longer within the power of individual effort; that they need combination of effort—in short, team work; that for such work equipment and apparatus are needed, and these in turn need organization and involve increased cost. If you admit that these organized measures are to be within the reach of all members of the community, two things follow—namely, that efficient medical service cannot be self-supporting; that its provision implies not only men but equipment, and that both must be distributed according to the needs of the community.

There is an interesting parallel between provision for education and health, both as regards historical development and present needs. Education was at one time patchy, unorganized, and dependent on voluntary effort. In 1870 Parliament stepped in, with the result that state and voluntary education proceeded side by side. Since then the state service has gradually overgrown the voluntary one, because it has been recognized that education should be available for all, that the state is responsible for the education of its citizens, and that the cost is too great to be supported by fees or by voluntary effort alone. This cost is in part defrayed by an education rate chargeable on householders, and Dr. Gordon Dill's suggestion* that a similar rate should be charged for health has a great deal to recommend it; it would be a local contribution to the cost and would not be altogether an additional burden, for its application would soon be followed by a diminution in the poor rate.

Health organization is following a similar development, though tardily and at a distance. Yet in reality health is a more fundamental need than education, and without doubt the two together form the foundation stone of the state. Notwithstanding, there exists no Ministry of Health, and even now, when it is proposed to form one, such a ministry is to be tied politically to the Local Government Board.

* To Dr. Gordon Dill's work and memorandum on this subject I owe a debt.

THE NEEDS.

One is thus forced to the conclusion that medical services must have some kind of state aid and central control; that for their efficiency they need co-ordinated effort installed in specially equipped institutions. We thus reach, as I would suggest, by the irresistible logic of facts, the following conclusions:

1. State aid: central control.
2. Co-ordinated effort—team work.
3. Development of institutions specially designed for diagnosis and treatment, styled for brevity institutional treatment.

To the foregoing I will add a fourth—that curative and preventive medicine are no longer separated in accordance with any sound principle, and should be brought together in thought, teaching, and organization.

There is nothing revolutionary or new in these propositions, and the directions of progress in recent days have conformed to them. What is needed is their wider recognition and systematic application.

Team Work.

Let me view the above propositions in the light of concrete examples. Take the history of the diagnosis and treatment of phthisis. At one time the treatment was home, shut windows, and cod-liver oil. Next, following the discovery of the tubercle bacillus, it was an occasional open window and cod-liver oil, but still at home. Then came the sanatorium, and with it the dawn of hope and progress. Who would dream now of treating phthisis outside such a special institution or colony? And what all admit is true of phthisis is equally true of other diseases. Let us look at phthisis from the point of view of diagnosis. At one time the only investigation available was clinical, and in skilled hands it was, and is, most valuable. Now the evidence of physical signs is marshalled side by side with that of bacteriology and radiography. In other words, whereas one individual formerly sufficed, three are now required. And viewing the matter from the point of view of cost, formerly it was one fee, now it is three. Diagnosis, in short, needs the work of a team, and a team works best in the harness of the same institution. One more look at phthisis from the point of view of prevention. An organization has grown up whereby contacts are examined and families instructed—namely, the tuberculosis dispensary, in which preventive and curative medicine are working side by side.

Consider venereal diseases: with the growth of knowledge they require a team for their proper diagnosis, and a special equipment for their treatment, and in their case, too, prevention would be more closely allied with cure but for the fact that our pastors and masters are not endowed with grace, wisdom, and understanding.

Or, again, heart affections. These may require, in addition to clinical investigation, the use of radiography and the electrocardiograph; and for the cure of those which have not grave structural lesions we need, not bed and drugs, but an ordered régime in the open air with graduated exercises and amusements, which serve to tone up the body, of which the heart is a part, to remove the heart from the realm of the patient's consciousness, and restore confidence to his mental outlook. In the treatment of such patients drugs play no part of primary importance.

Take many gastro-intestinal maladies: such may need the clinical physician, the radiographer, the bacteriologist, the chemist, and the surgeon—some or all of them working in co-ordination in specially equipped clinics, where the investigations and treatment can be carried out.

Lastly, take a recent and striking example of the advantage of organized team work—the orthopaedic centres set up by the Army Medical Service under the inspiring leadership of Colonel Sir Robert Jones. Here there is the complete equipment for dealing with injured limbs, including surgeon, neurologist, and special surgeon for dealing with nerve injuries, departments for massage and remedial exercises, electrical treatment, curative workshops; and the results achieved far out-distance those obtained by unorganized individual effort, however brilliant.

Such advantages are seldom available, for the reason that the need has far outstepped the provision. For the masses the few voluntary hospitals are wholly inadequate.

Recall the list of patients waiting weeks, and even months, before they can be admitted for medical treatment or some necessary operation. The middle classes of moderate means who do not think it right to go to hospital fare worse. And even the rich man who can afford whatever cost is needed suffers from the investigations not being carried out in a clinic where results can be placed side by side and a collective judgement given.

The Place of the General Practitioner.

Looking to the future, it is certain that investigations will become increasingly technical and collective. Likewise, efficient treatment will more and more require regimen, special environment, and special equipment. What must be the result? The home will become less and less suitable for the sick; the custom will grow of the patient going to the doctor instead of the doctor to the patient.

After all, if you wish to be educated you go to school or college; if you wish to see the drama you go to the theatre. Why, then, if you want to be restored to health should you not go to a hospital? Why is a room in a dwelling made to suffice? Why not the best?

And this insufficiency in our organization has another serious aspect—namely, that adequate opportunities are not afforded to the general practitioner to do the best work. As a result he is apt to get disheartened and to deteriorate as a workman would without the best tools or an adequate workshop. Team work and organized equipment should be available, though in varying degree, in the same way as schools are provided. Though it is quite right that consultants and specialists should be available to help the general practitioner, these are not nearly so important as providing the means for the general practitioner to help himself. The general practitioner is a central pillar of any scheme of reconstruction, and nothing is more important to the public and profession alike than to attract the best type of brain and character to the profession of medicine. To do this there must be provided opportunities for doing good work; opportunities for observation, self-improvement and research, adequate repose and adequate remuneration. It is interesting to note amongst the doctors serving with the army abroad a realization of the deficiencies of existing civilian practice and a growing desire for a better system, which, though preserving liberty of thought and action, will provide the organization necessary for worthy achievement.

The general practitioner's outlook needs to be more comprehensive. In him should be realized the correlation of preventive and curative medicine. He should concern himself with measures for the maintenance of health as well as the curing of disease; he must be brought into the position of a rightful leader and skilled adviser in all that appertains to the social service and welfare of his district; in matters of health he should be the father of his people. This means that his education needs modification; it must take more account of preventive medicine and social service. In the organized effort for the rearing and preserving of a healthy race the general practitioner will take a leading part. The losses in the war will make this a dominant interest. The maternity centre, the school clinic where early defects and deviations from health are dealt with before disease develops, the institute of physical culture which will guide the physical training and games of the local community, will all need his skilled leadership. It is clear, then, that if an adequate medical service is to be available for the population, and if the doctors are to be enabled to staff that service efficiently, there must be in each local community adequate buildings and equipment where patients will go for diagnosis and treatment, and where health services will be housed. This medical service will need state aid and central guidance.

THE ORGANIZATION REQUIRED.

Such medical service will comprise organization, (*a*) at the centre, and (*b*) at the periphery—that is, in local communities.

Although it would be premature, if not harmful, to draw up any detailed scheme of organization, it will be useful to discuss the lines along which development should proceed. Indeed, any scheme should be established gradually, will improve with experience, and no doubt vary in its details according to local needs.

Hospitals and Clinics.

The hospitals required will consist of local hospitals, central hospitals, and teaching hospitals.

Let me mention first a fact finally established by this war—that hospitals are best built on the hut system, with ample provision for open-air treatment; that such hospitals are inexpensive and can easily be replaced or extended should the progress of knowledge or the changing needs of a community so demand.

No doubt existing cottage hospitals, the larger voluntary hospitals and certain hospitals previously used by the Poor Law authorities might be available for the service, but a large number of hutted hospitals with adjacent clinics would need to be erected. In this connexion let me call attention to a valuable pamphlet, "Hospitals, Yesterday, To-day and Forever," by Colonel Joseph Griffiths of Cambridge.

Organization at the Periphery—in Local Communities.

The first essential is the concentration of what may be called the machinery of health in one or more localities. This would secure efficiency and economy of administration, co-ordination of effort, and good fellowship amongst the doctors and other workers.

In a small town the buildings for the health service would be all located at one spot, whereas in larger towns there would need to be two or more clinics, each serving a group of doctors. The doctors would further co-operate in running hospital accommodation for their private patients.

I will briefly sketch the accommodation in a small town served, say, by six doctors. It would comprise consulting rooms, examining rooms, minor operating room, *x*-ray equipment, a laboratory, provision for nurses, a room for notes and records, and adjacent to it a common room for the medical officers. In the proximity would be the hospital, baths and other remedial equipments, and the centres for maternity care, infant welfare, and school hygiene, etc. Rather more remote would be the covered and open grounds for physical culture, and adjacent to these the playing grounds. In short, the health organization of that community and the intellectual life of the doctors would find a home and mutual inspiration in the settlement. Incidentally this arrangement would lead to close co-operation in work amongst the doctors and allow them more freedom for recreation and repose. There will still be home visiting and treatment, but these will tend to diminish as the benefits of such a scheme become apparent.

Though such settlements could be founded in all towns they would differ in form. In larger towns the clinics and their equipment would often have to be separated from the hospital and open-air services on account of the difficulty of obtaining adequate space near the heart of the town. That is as it should be, for I venture to think that most hospitals in the future will be built on the outskirts of towns where air and space will be available, and will be linked up by rapid transport with clinics and out-patient departments distributed amongst the population.

These local hospitals will be related in groups to *central hospitals* situated in larger towns. The staff of a *central hospital* will provide the consultants and specialists for the local hospitals of its district. These specialists will serve on a whole or part time service according to the nature of their work.

Round the central hospital should be gathered health services, both preventive and curative, and these would be more amply provided, both as regards equipment and personnel, than those of the local hospitals.

Although specialists will thus be available for each local hospital, there will be nothing to prevent a doctor sending cases to other consultants should he or the patient so wish. These central hospitals might in turn be subordinate to still larger provincial hospitals.

THE ADMINISTRATION OF THE MEDICAL SERVICES.

This is admittedly a most thorny question, beyond possibility of detailed discussion at the present juncture. But there are certain conditions essential to any plan.

All the buildings and equipments, such as hospitals, clinics, laboratories, necessary for the medical services will be constructed and maintained by the new health

authority. They would be available for all citizens, though in practice they would be only partially used by the well-to-do. It might be wise to charge the doctors small rents for their clinics, in consideration of the fact that they would use them for their private patients, and no doubt paying wards would grow up in proximity to the public-provided hospitals. Be it noted, however, that the provision by the health authority of good buildings and equipment would be an investment yielding a profitable return in the shape of better work by the doctors, and therefore improved health of the community.

All professional and technical questions must be determined alone by the doctors, and administrative questions by a health board composed of both lay and professional members. Neither the professional nor lay members should be chosen from any area smaller than a county or large borough. They would be in part elected and in part *ex officio*. Amongst the doctors determining matters of administration great care must be taken to avoid undue predominance of either the preventive or curative sides of medicine as such. Though granted adequate powers, the health boards should be controlled, as regards larger questions of policy, by the Ministry of Health.

By this plan of choosing big areas for the Health Board electorate, one would hope to avoid the evils of local politics and to secure a better type of representative. By retaining the determination of policy and the confirmation of the more important administrative acts at the Health Ministry one would secure control without over-centralization. The only alternative I see is to put more of the administration at the centre.

Technical Matters must be Decided by Medical Men.

But, whatever the actual plan, the principle that technical matters should be decided by medical men must be adhered to, and thus one of the errors of the Insurance Act put right.

The practice of putting the skilled under the control of the unskilled must cease. The thing is so clear.

What would engineers say if their shop was run by an assortment of painters, tailors, and doctors? Would they like to use the bridge or locomotive constructed under amateur advice? Or the shipwrights, if they were told their business would be conducted by grocers, clergymen, and chemists? Would they enjoy a trip in a ship designed by the parson?

Well, this "settlement" will be our shop where we put the human machine into repair, and we are the only people who know enough about the subject to say how it is to be done and what equipment we require, and it is to the advantage of our patients to be treated by people who know their job.

Imagine the law courts superintended by doctors! But no one is allowed to control the lawyers—in fact, the cleverest thing about them is that they manage to mind their own business and every one else's as well.

Although we claim that our workshops—namely, the clinics and other institutions—should be controlled by doctors, we quite see that those doctors should be subject to a court of appeal; but here again it must appeal to people who know, not to amateurs. There should be a system of medical administration and appeal right up to the Central Medical Board, which will advise and have direct access to the Minister. Either the permanent under secretary should be a medical man or the professional Chairman of the Central Medical Board should have executive powers. On the administrative side there should be a mixture of doctors and trained laymen, but on strictly health matters the men who know must be in control throughout, and the supply of good men will be ample, if only we go wide enough and are not afraid of youth.

How would this Scheme Work Side by Side with the Insurance Act Administration?

This problem would no doubt be difficult, but should be capable of adjustment. Insured persons would have the right of all citizens to the advantages of the buildings and equipment of the medical services. They would be on the panel of the doctor of their choice as heretofore, and if they required institutional treatment, perhaps some contribution from the insurance authorities should be made to the attending doctors and the Health Board.

The insurance authority should be represented on the county or borough Health Board, but it should on no account directly control the local clinics and hospitals. Its interests are too material and commercial to make it suitable for direct control, and it is too devoid of medical knowledge.

The doctors would be under control as regards efficient and regular attendance at the hospitals and clinics. Their service would be part or whole time according to their work; they would treat their own cases in the local hospital. This is essential if a high standard of professional work is to be maintained, for good men are only engendered by good work. Moreover, specialists would be available when needed.

Staffing of Local Clinics.

Turning now to the local clinics serving preventive medicine—clinics for maternity care, infant welfare, school hygiene, physical culture, tuberculosis, etc.—all these, except in the larger communities, should be staffed where possible by the medical men of the district on the basis of a part-time service paid by salary. It should be a *sine qua non* that candidates for any of these posts should hold a certificate of efficiency in the special subject concerned, and education in these subjects would be one of the functions of the teaching hospitals. Appointments to these posts should be subject to confirmation by the Health Ministry, acting through its medical advisers.

These posts would afford scope and encouragement to good work and therefore attract the best class of doctors. Moreover, it is essential that the local doctors should be associated with the health interests of their people.

From the foregoing it will be seen that a larger proportion of a doctor's earnings will be by salary and a smaller proportion by fees than heretofore—in other words, there will be a part-time salaried service. In the case of specialists in preventive medicine—radiographers, chemists, bacteriologists, and pathologists—their services will be mainly whole-time and paid correspondingly by salary. Speaking generally, the number of whole-time men will be greater within larger towns than in the smaller communities.

There are some who think that the ends we seek would best be attained by a full-time salaried service for all doctors, private practice being abolished. Although for many varieties and conditions of medical work such a whole-time service is advantageous, on the clinical side it would be gravely detrimental to the best interests of both patients and doctors. In few callings is there such a wide gap between the minimum and the maximum efforts—efforts which make demands upon heart as well as head. The distinction between the performance of a routine duty and the fixing of the mind on each individual problem is vital. Liberty of action, the stimulating force of rivalry, and the personal touch are essential. The patient needs not only advice but confidence—the human being of his own choice, not the official of some one else's choice. Medicine stereotyped under such a salaried service would become a machine without a soul or hope of salvation.

The term "State Service" is constantly misunderstood. For years past Government departments have been forming medical services. At first these services were confined to preventive medicine, but for some time past they have also drawn, and in increasing degree, curative medicine within their orbit: witness tubercle, venereal disease, and the state aid given to insured persons. This "State Service" still grows, and with each accretion becomes more cumbersome, and increasingly in need of recognition and organization. State service, strictly speaking, is service under the central government as distinct from local or municipal service, and either may be part or whole time.

Imagine, too, how invaluable these hospitals and clinics would be from the point of view of the progress of knowledge. They would encourage a spirit of inquiry. Their unified system of records would enable information to be continuous and interchangeable; lines of investigation would suggest themselves and be fruitful in results. Take as an example the question of "after-results," about which accurate information is so important and yet so deficient. Supposing information were needed on the worth of this or that treatment or operative procedure, an answer would be forthcoming based on full and

accurate data—an answer which might on the one hand be an encouragement or on the other hand a wholesome check on ill-judged procedures and unbridled enthusiasms. The Medical Research Committee has founded and staffed for the benefit of the Army Medical Service a statistical department worthy of imitation. It is easy to see what fruitful fields of collective investigation would open out under the guidance of a skilled staff, and, again, what favourable opportunities would be afforded to clever men to make manifest their worth.

Advantages to the Public and the Profession.

What advantages would accrue to members of the public and doctors by such a change in medical organization? As regards the public, their health would be guarded and the beginnings of disease would be detected and dealt with at a stage when treatment is likely to be effective; there would be at their disposal the means of collective investigation and buildings equipped for the purpose, and institutional treatment where necessary.

But not the least of the advantages would be that the trusted medical men of their choice would be more efficient because they would have the opportunities of doing good work which are so often now denied them. Can anything be more heartbreaking and ultimately more dulling to the intelligence than constantly to feel you are prevented probing to the bottom of a problem?

The suggested plan would bring more interest and stimulus into the life of the doctor—he would continue to develop; he would have the inspiration and opportunities of good work, could follow up his cases and exchange ideas with his colleagues in the "settlement," which would become a centre of intellectual life.

Financial Rewards.

And how would he stand as regards material prosperity? He would do his work in less time with less fatigue and at less expense because more of it would be ordered and localized. He would have the advantage of the clinic and equipment for his private patients, and without doubt private hospital wards should be established by co-operation or otherwise. Salaried posts in the health service would be open to him, and salary has the advantage of greater security. If a doctor under the Insurance Act, he would have the proceeds of his panel or any modification of the panel system that might come about. He would certainly get more repose, for the association of doctors would be much closer, and therefore mutual help easier.

As regards remuneration justice demands reform. When you consider the exacting nature of a doctor's life—the long hours, disturbed nights, high tension of his work—it is only just he should be so paid as to live a reasonable life without anxiety. That is not so now. Take the salary of the Poor Law medical officer. Compare the salary and responsibilities of many a medical officer of health with those of a County Court judge—deplorable. Take a doctor who may get £30 a year net for a panel of 350 patients, or innumerable instances of doctors being paid salaries which workmen would reject with contumely.

These things must be changed. If only the truth is presented they cannot continue. It is unthinkable that friendly societies, insurance authorities, trades unions—so many of whose members have fought strongly and justly for better pay and shorter hours for their class—should be unwilling that doctors, to whom they owe so much, should have adequate remuneration and reasonable conditions.

On the other hand, there should be a more strict limitation of the number of the patients which a doctor may place on his panel. While huge panels are permissible, pecuniary reward goes too much to the man with physical endurance and plausible tongue and too little to the man possessed of brain and conscience.

Ministry of Health.

It is obvious that such a body politic would need a brain at the centre to inspire, guide, and control its activities. This would be the purpose of the Ministry of Health, the foundation of which is the most pressing of all reconstructive problems. With so much of the flower of our manhood sacrificed for the great cause, the rearing of a healthy race has become a supreme necessity.

How is that ministry to be established?

Doubtless an independent department unencumbered by vested interests and prejudices would be best; but with a Parliament which has long lost the faith and enthusiasm of youth, the difficulties of passing such a scheme might be great. On grounds of expediency the administrative association of the new Ministry with the Local Government Board and the Insurance Commission has something to recommend it as offering a line of lesser resistance. But if the adoption of this plan is not merely for convenience of organization, but means that the Ministry of Health is not going to have a bigger horizon than that of the Local Government Board and Insurance Commission, then we must emphatically say "No." And alas! there are evidences that such is the prevalent spirit: witness the departmental obstruction to the formation of a Health Ministry and the introduction of pettifogging measures seemingly actuated by the desire rather of vested interests to dig themselves in, than for real progress.

We should all be prepared to give and take and subordinate predilection to the attainmentof a great object. But on principles there can be no compromise. The needs of the nation require a comprehensive reorganization of the medical services. That reorganization, involving, as it must, every branch of the profession, can only succeed if it enlists the confidence and support of the doctors. The Ministry will need to draw to its counsels representatives from all departments of medicine, both preventive and curative, and these counsellors must have real power, with direct access to the Minister, in contrast to the baneful tradition at the Local Government Board whereby the medical officer can only advise the Minister through the intermediary of a lay official.

The profession for its part needs to realize the weight of its responsibility, close its ranks, work out a sound policy, improve its organization for expressing its views, and thus secure that proper influence in public affairs which, to the detriment of the state, is now so sadly lacking.

In the United States the medical profession occupies a leading position in the life and counsels of the American nation. In England, although doctors in their individual capacity enjoy the confidence and even the affection of their patients, yet as a profession their influence is small and their advice regarded as of small account. This must change, and let us see to it that we come into our kingdom.

THE CLINICAL ORGANIZATION OF THE PROFESSION FROM A GENERAL PRACTITIONER'S POINT OF VIEW.

BEING THE PRESIDENTIAL ADDRESS TO THE METROPOLITAN COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

BY M. G. BIGGS, M.D.

ORGANIZATION of the profession in all its details essentially belongs to the British Medical Association; the only reason that the clinical side has not been so carefully looked after is due to pre-occupation during the last few years with two serious crises—the Insurance Act and its developments, and the great war still going on its way; even so, however, this side of the work has been by no means overlooked, and it is my special wish to point out that general practitioners must take the matter in hand themselves and work out their own salvation by elaborating a reasonable scheme.

The question may naturally be asked, What are the reasons for organizing the clinical work of the profession?

The answer in its most general terms is that our knowledge of the extremely complex and elusive organism with which all our work is associated has been so enormously enlarged and so many instrumental means of investigating disease have been introduced that it is beyond any ordinary man's power to use all successfully, and many, if not most of them, require the whole service of one individual, in order that he may become expert and possess the necessary experience which shall enable him to interpret his results accurately.

In my opinion it will be necessary for general practitioners to specialize to some extent in the future, and then by team work, either in partnerships or some other way convenient to all, to enable mutual work to be done amongst and for ourselves, and to the great advantage of our patients. Cannot general practitioners do something themselves to promote this pooling of clinical work?

Before we can move to any advantage we must throw overboard one fetish—namely, the all-sufficiency of the individual practitioner. Such a claim might be set up for a Boerhaave, but it is frankly impossible in our day. This also leads to an intensely individualistic outlook.

My predecessor pointed out that the local hospital should be the highest unit, and from it should radiate all the energies devoted to the prevention and healing of disease, and with this I cordially agree. Such hospital should be thoroughly organized, with a full staff of specialists, all apparatus for examination and treatment, laboratories, clinical and pathological, so that all doubtful and difficult cases and those requiring special treatment should find all required for their successful healing. At the present time, however, all are not so equipped. The staff should do everything to encourage post-graduate study by lectures, demonstrations, etc., and to this end the out-patient department should be consultative, and every encouragement held out to practitioners to bring their patients, and so get the full advantage of the consultation.

The necessity of arranging some means by which the general practitioner should be able to dovetail in with his clinical work preventive medicine is urgent, and no great improvement in this branch will result until this is done.

Such an arrangement would make it clear beyond cavil that the real aim of medicine is to prevent disease, and that our clinical efforts must be infused with the full recognition that our duty is not done when we have prescribed medicine or treatment, as we are bound to explain that sickness is the outcome of breaches of hygienic laws; we must act as hygienic missionaries and so bring about a fruitful marriage between clinical and preventive medicine.

Men must also work together—team work as against individual—team work between consultant and general practitioner, nurse and doctor, qualified and unqualified persons. Much of a doctor's time could be saved by utilizing the services of assistants, such as dressers under qualified medical supervision, and between general practitioners themselves. A form of team work would be to encourage partnerships, each partner developing his own special line and attending those cases that fell within his sphere. For example, three men might easily join together, one a general practitioner taking ordinary work, a second doing nose, ear, and throat work, and a third eye work. Such partnerships would, I believe, be very successful, and would tend to keep in our own hands much work that now finds its way into the practice of the unqualified.

Before the Insurance Acts became law, it was my opinion that local clinics would tend to solve many of our problems, and now such clinics are the order of the day under the names of Poor Law, maternity and child welfare, and venereal.

These local clinics should be centrally situated so as easily to be reached—well adapted for their purpose, thoroughly hygienic, with a sufficiency of rooms so that several doctors might be seeing patients at the same time.

Special rooms for ophthalmic, microscopic, and x-ray work should be provided, and one or two beds, so that, for instance, a patient might be taken in at night, given a test meal, and in the morning the test duly applied. A nurse should also be in attendance whenever patients are being seen.

In this way men would be brought together in one building, and this would make it easier to develop mutual help and assistance. There ought to be no illusions. We may either lead the way of and by ourselves or we shall assuredly be forced into a way devised for us by those who do not understand the position, because they are united, whilst we present an unorganized mob, riddled with doubts and differences, the result being easy defeat because of the failure to grasp the emergency and deal with it properly.

This address is intended to be suggestive, to cause all practitioners to think and act so as to preserve their independence by agreeing upon a common course of action.

THE SYMPATHETIC NERVOUS SYSTEM AND THE "IRRITABLE HEART OF SOLDIERS."

BY

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THE condition known as the "irritable heart of soldiers" is recognized by a symptom complex, consisting of increase of pulse-rate, shortness of breath, palpitation, precordial pain, and dizziness provoked by slight stimulation such as exertion or excitement. The cases that exhibit this complex of symptoms may be divided into two groups, in one of which signs of organic disease can be elicited. The cases in which the investigations to be reported were made belong to the other group, to which for purposes of convenience the term "soldier's heart" is usually confined. This group may be considered to include: (*a*) Cases with a history of acute rheumatism or allied infections, even if some years before the onset of the symptoms of irritable heart, but without signs of organic disease; (*b*) cases with a history of an acute infection, such as typhoid fever, dysentery, "influenza," trench fever, etc., or of "gassing" at a short period before the onset of the symptoms, and (*c*) cases with a history of shell shock or severe physical or mental stress immediately preceding the onset.

These patients appear to differ from healthy men only in that a stimulus, such as excitement or emotion, produces an unusually large response. The usual methods of clinical examination show them to be free from any other signs of disease. Investigations into their condition may be expected therefore to show quantitative but not qualitative divergences from the standards of healthy men.

One of the purposes of this investigation was to find out the mechanism by which certain of the symptoms are produced; the result required was a therapeutic measure of relief. The symptoms by which the condition may be recognized are associated with the organs of circulation and respiration, organs the mechanism of which are related to the involuntary nervous system.[1] Bearing this in mind four drugs have been considered by us to promise means of modifying the innervation of the heart in patients in whom this system is considered disturbed—namely, adrenalin, apocodeine, acetyl-choline, and atropine; the first two affect the sympathetic system, adrenalin by stimulating it, apocodeine by inhibiting it; and the second two affect the vago-sacral system, acetyl-choline by stimulating it, atropine by inhibiting it. We have had opportunities of testing reactions of the first two only.

In all cases the intravenous method of administration was employed as being the most accurate and as imitating the physiological and pharmacological methods by which the actions of the drugs were originally ascertained. Since the patients differ from healthy men in that the 'threshold" of reaction to normal stimulus is lower, it has been convenient to determine, if possible, a dose of each drug that would give a reaction in the patients, but not in healthy men, or in healthy men and not in the patients. Such a dose would be the minimal dose producing a reaction in the more susceptible group, but would not necessarily produce all the possible reactions of the drug in question, since different doses are required to produce all the possible reactions. Excitement and emotion produce to a varying degree the symptoms and signs of "irritable heart" and also the symptoms and signs to be expected from stimulation or inhibition of the involuntary nervous system, and since in some of the patients the effect of excitement is great, precautions had to be taken to avoid this reaction interfering with the effect of the drug.

Records of pulse-rate and respiration were made with a Mackenzie ink polygraph, and of the systolic blood pressure by means of the Riva-Rocci type of sphygmomanometer and the auscultatory method of reading. The patient was allowed to lie flat on the bed for ten minutes or more to avoid any disturbances due to exertion, and observations and records were then begun, and continued for a further ten minutes before the arm was cleaned for the injection. The records were continued

without a break through the process of preparation and the introduction of the needle of the hypodermic syringe into the vein of the arm. The needle was allowed to remain there for several minutes until the pulse-rate and blood pressure had reached a constant level, the level of rest, and until the patient was himself resting placidly; the injection was then made without the patient being aware of it. The patient was instructed to mention any discomfort or other sensation as it occurred. The amount of the drug used was contained in 1 c.cm. of solution and the injection occupied half a minute.

The control cases were carefully chosen, only men who had undergone the exertions of military service without developing symptoms of "irritable heart" being selected.

Adrenalin.

The 1 in 1,000 solution of adrenalin hydrochloride prepared by Parke, Davis, and Co. was used, and a minimal dose was found to be 0.01 gram. The reaction was observed in fourteen cases, ten of whom had "irritable heart," while four were free from such symptoms. In those with "irritable heart" the usual response was that a few seconds after the injection the skin of the face became momentarily pale, and this paleness was followed by more or less flushing of the face, and a feeling of warmth all over the body. The flushing was never very intense, and gradually passed off in the course of three to five minutes. With the onset of the flushing the patient would speak of a certain degree of throbbing in the chest or head and neck, or both, of a constrictive feeling in the chest and of a feeling as of sinking through the bed. An increased pulsation was visible in the vessels of the neck or of the precordial region, and in one instance in all the larger superficial arteries. As with the flushing, these phenomena were transient, gradually passing off in three to five minutes. In the four cases which did not suffer from irritable heart the momentary pallor appeared, but this was not followed by flushing, throbbing, or discomfort of any kind.

From the polygraphic records the pulse-rate for each six seconds' period was estimated, and the rise of pulse-rate in each patient calculated. In the case of the pulse-rate before the administration of the drug the rate during the eighth minute before the injection was taken, since at this time it had become constant and was at the level of rest. As the pulse-rate after the injection, the highest rate for a six seconds' period was taken, and this always occurred within the first minute after the injection. The rise in rate is given in the first column of Table I, and the figures show a wide variation, from 7 to 52 beats a minute, and the average rise (31.1) for the ten cases (1 to 10) of "irritable heart" is practically the same as the rise (28.0) for the four (11 to 14) control cases.

In calculating the change of systolic pressure, the level at which the pressure remained for a few minutes before the preparations for injection was taken as the pressure before injection, and the highest reading immediately after the injection was taken as the pressure resulting from the injection. In Case 5 a fall resulted, but in the other thirteen cases the injection was followed by a rise, and the figures representing the change in millimetres of Hg are recorded in the second column. The average change for the ten cases of "irritable heart" is practically the same as for the four control cases; but, while the four controls show an almost constant rise of 21 to 25, the figures for the "irritable heart" cases show a variation from a rise of 50 to a fall of 10.

The momentary pallor was not observed in two cases, one of whom was a case of "irritable heart," and the other a control. The flushing of the face was seen in seven of the ten heart cases, and in one of the four controls. Respiratory disturbances of various kinds were seen in seven of the ten heart cases, but not in any of the controls, and while all but one of the heart cases were visibly affected this was not observed in any of the controls. Subjective throbbing of the head or chest or both occurred in all the heart cases but one. It was not mentioned by any of the controls. Table I shows that while no distinction could be drawn between the cases of "irritable heart" and the controls by means of change in pulse-rate or in systolic blood pressure, the other phenomena of the reaction observed in the cases of "irritable heart" with the drug employed were entirely absent in the controls.

Curves showing the changes in pulse-rate, respiration rate, and blood pressure demonstrate great variation in the respirating rate, including a slowing that occurred immediately after the injection in five of the cases, and was followed by a rise in rate, but fail to demonstrate any essential difference in the two groups of cases.

Injections of 1 c.cm. of normal salt solution were carried out in cases 1, 5, 8, and 9, with the same method of procedure as was used with the adrenalin, with an entire absence of objective or subjective reaction.

TABLE I.—*Results of Injection of 0.01 gram of Adrenalin.*
(Cases 1-10 "irritable heart"; 11-14 control.)

Case No.	Rise of Pulse-rate.	Rise of Systolic Blood Pressure in mm. of Hg.	Pallor.	Flushing.	Deeper Respirations.	Objective Discomfort.	Subjective Throbbing in Head and Chest.
1	52	23	+	−	+	+	+
2	41	20	+	+	+	+	+
3	20	10	−	+	+	+	+
4	7	10	+	−	+	+	+
5	32	10	+	−	+	+	+
6	25	50	+	+	−	−	−
7	30	22	+	+	−	+	+
8	22	16	+	+	+	+	+
9	39	17	+	+	+	+	+
10	43	26	+	+	−	+	+
11	37	25	−	+	−	−	−
12	27	21	+	−	−	−	−
13	30	22	+	−	−	−	−
14	18	22	+	−	−	−	−

The evidence derived from the large number of investigations by physiologists on the action of adrenalin shows that its action on organs supplied by fibres from the sympathetic nervous system is the same as that obtained by stimulation of the sympathetic fibres.[2] On intravenous injection it constricts the arterioles of the skin, raises the blood pressure, and accelerates and augments the heart-beat. With the minimal dose used in this investigation the pallor, rise of pulse-rate, and rise of systolic blood pressure were present both in the cases of "irritable heart" and in the controls, and to the same extent in the two groups of cases. Augmentation, however, as shown by the throbbing, which was both objective and subjective, was greater in the heart cases than in the controls. The restlessness and the dull flushing may be the result of this increased action, and possibly also the deepened respiration. That one function, augmentation, may be dissociated from another, acceleration, is a phenomenon that has been observed by physiologists in the action of adrenalin, and it is not impossible that with doses other than that employed other functions of the sympathetic system would also show quantitative differences in the reactions of the two groups of cases. Whatever the full explanation of the observed phenomena may be, it would appear that the heart in the cases of "irritable heart" is in some ways more susceptible to the action of adrenalin, and from this it may be deduced that it is in some ways more susceptible to stimulation of its sympathetic nerve supply.

Another explanation is that the action on the heart may be the same in the two groups of cases, but that the mechanism for reception and recognition of sensations is more sensitive in the heart cases, so that they show the effects of the action to a greater extent. This cannot, however, explain the phenomena of the observed increased throbbing of chest and neck.

Apocodeine.

A solution of apocodeine chloride in distilled water was used, and a dose of 0.02 gram of the salt was found to give a reaction in cases of "irritable heart," but not in the

other cases investigated. The reaction was observed in ten cases, of whom six had symptoms of "irritable heart" and four had not.

In the heart cases at half to one minute after the injection a bright red blush appeared on the face and neck and spread to a greater or less extent over the trunk as an intense erythema, passing off in the course of four or five minutes and leaving a blotchy erythema on the shoulders that faded more slowly. This was accompanied by a feeling of heat in the head and to a less extent in all parts of the body. In some instances the patient's breathing deepened or quickened, and he spoke of a sensation of dizziness. In the four cases without symptoms of irritable heart no comparable reaction was observed. In two instances a slight flushing of the face was seen, one of the cases speaking of a sensation of heat in all parts of the body and the other of slight warmth of face, while in the remaining two no objective or subjective phenomena of any kind occurred.

The rise of pulse-rate and of systolic blood pressure were calculated as in Table I. The rise of pulse-rate varied from 0 to 60, and was almost consistently greater in the heart cases than in the controls, averaging 25.5 in the first group and 10 in the second. The rise of 60 in Case No. 18 was exceptionally high, and in this case the erythema was exceptionally intense and widespread. The patient was very nervous and changed colour readily under ordinary conditions of emotion and exertion.

The rise of blood pressure varied from 22 to 5 mm. of Hg, and no distinction between the two groups could be ascertained in this direction.

Erythema was absent in one of the six heart cases and but slight in a second, while it was absent in two of the four controls and slight in the other two. The sensation of heat was absent in two of the heart cases but marked in the others, while it was marked in one of the controls, slight in another, and absent in the remaining two. Respiratory hurry and a sense of dizziness was experienced by three of the six heart cases and by none of the controls.

The observations on the ten cases investigated have been tabulated in Table II, Cases 15–20 being cases of "irritable heart." It will be seen that the distinction between the two groups of cases is interfered with by Case 19. This patient was habitually nervous and excited, but immediately following the drug his breathing became easier and he became quite calm. The breathing remained quite easy during the remainder of the forty minutes during which he was under observation, but the nervousness returned ten minutes after the injection.

TABLE II.—*Results of Injection of 0.02 gram of Apocodeine.*
(Cases 15–20 "irritable heart"; 21–24 control.)

Case No.	Rise of Pulse-rate.	Rise of Systolic Blood Pressure in mm. of Hg.	Erythema.	Sensation of Heat.	Respiratory Discomfort.	Dizziness.
15	14	5	+	+	+	+
16	16	10	+	−	+	+
17	19	10	+	+	−	−
18	60	21	++	++	−	−
19	27	22	−	−	−	−
20	17	14	Sl.	+	+	+
21	12	8	−	−	−	−
22	16	14	Sl.	+	−	−
23	12	15	Sl.	Sl.	−	−
24	0	7	−	−	−	−

According to Dixon,[3] apocodeine affects the ganglionic junctions of the involuntary nervous system, causing inhibition without preliminary stimulation. A rise in pulse-rate with small doses he considers due to inhibition of the vagus at its ganglionic junctions, while larger doses cause slowing of the heart and an intense redness of the skin from inhibition and paralysis of the sympathetic ganglionic junctions, and later of the nerve endings. The intense erythema observed in the cases of irritable heart was quite out of proportion to the rise of pulse-rate, and it is difficult to explain it as a result of this rise, but it is reasonable to suppose that it resulted from inhibition of the sympathetic nervous system, causing dilatation of skin vessels. The feeling of warmth may be regarded as arising in the same way.

In dealing with a condition that appears to differ chiefly from that of healthy men in that the threshold for normal reactions is lower, it is difficult to obtain definite and indisputable proof of specific abnormalities, and conclusions not warranted by the methods of investigation must be avoided, but the differences in the reactions of the two groups of cases justify a conclusion that in some respects the sympathetic nervous system is more susceptible to depressing influences in cases of "irritable heart" than in healthy men.

Summary.

Cases of "irritable heart" and healthy subjects have been compared in respect to their reaction to adrenalin and apocodeine. In the case of each drug minute doses produced a greater action in the patients than in the controls. It is concluded, therefore, that the sympathetic system of nerve fibres, using the term in its physiological rather than in its anatomical sense, is relatively unstable in that it appears to be more susceptible to the stimulating and depressing influences respectively of these drugs.

REFERENCES.

[1] Gaskell: *The Involuntary Nervous System.* [2] Gaskell: Ibid.; also work of Langley and others. [3] *Journal of Physiology*, 1904, xxx, 97.

THE PSYCHONEUROTIC FACTOR IN THE "IRRITABLE HEART" OF SOLDIERS.

BY

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IN 1871 Da Costa published his observations "on the irritable heart" as seen among soldiers invalided for this malady during the Civil War. During the present war this condition has again become prominent, and names such as "Disordered action of the heart" (D.A.H), "Effort syndrome," "Debility," "Neuro-circulatory asthenia," etc., are employed to describe the affection or the group of chief symptoms. The class includes all cases which present a well-defined syndrome in which certain nervous and circulatory symptoms are associated with increased susceptibility to fatigue, and in which no definite pathological condition can be found to which to ascribe the clinical symptoms. The underlying pathogenetic process is still unknown; and when we speak of the psychoneurotic factor in the "irritable heart" of soldiers, we do not imply an immediate causal relation between the two, or that the symptoms of the two originate in the same way, but rather that possibly both groups may result from some common but as yet unknown cause.

It is probable that at present under the term "irritable heart" are included types of cases which are fundamentally quite different. The prominence of the nervous symptoms in many instances is so striking that one naturally considers the relation to the psychoneuroses, just as the circulatory phenomena among certain cases of war psychoneuroses must have led neurologists to wonder where the dividing line is to be drawn; in truth there is a borderland where the two dominions overlap. Some even believe that the "irritable heart" represents merely the cardiac difficulties of soldiers suffering from war neuroses. Again, it is evident that a certain number of cases of "irritable heart" have suffered from symptoms of the condition long before enlisting, some dating the onset to the formative period or even to childhood. The question whether some cases are not congenital or even hereditary in character also occurs, particularly when dealing with soldiers who belong to the group called constitutionally asthenic. Then there is the serious and, in the American army, immediate problem of dealing with recruits with such histories who break down in training.

With these matters in mind we decided to analyse the detailed histories of one hundred unselected cases to see whether such an analysis would throw any light on these questions or give definite confirmation to certain impressions which had been gained in the course of daily routine observations. Our study was based upon the clinical material in the large Military Heart Hospital at Colchester, which admits almost exclusively soldiers invalided from the British Expeditionary Force.

For purposes of comparison the same characteristics selected by Captain Julian M. Wolfsohn in his valuable paper[1] on the predisposing factors of war psychoneuroses were utilized, and also the statistics on one hundred wounded soldiers used by him as controls. We have taken the liberty of reprinting two of his tables, but have incorporated our observations on cases of "irritable heart" in a column *between* those he has published for the psychoneuroses and those for control soldiers. In both tables (I and II) it will be seen that the percentage of the various characteristics named are in general highest in the psychoneurotic group, intermediate in the "irritable heart" group, and lowest in the control group of cases.

Family History.

It must be made perfectly clear that we were investigating the family history of cases of "irritable heart" for factors considered causal for psychoneuroses. The cases were invalided for "irritable heart" only, and the statistics obtained from these are placed in the middle column in both tables.

TABLE I.—*Percentage of Characteristics named in Family History of Cases suffering from Neurosis, "Irritable Heart" of Soldiers, and Controls.*

	Neurosis.	"Irritable Heart."	Controls (Wounded).
	Per cent.	Per cent.	Per cent.
Nervousness	64	45	15
Alcoholism (parents and grandparents)	50	15	24
Teetotalers (parents and grandparents)	30	15*	16
Irritability of temper	36	27	12
Insanity...	34	23	0
Epilepsy	30	15	0
Tuberculosis (immediate family)	12	13	4
Tuberculosis (relatives)	5	15	4
Stigmata	10	17	0
Positive history for one or several of above	74	56	38

* Figure incomplete.

A positive family history (Table I) of one or several of the characteristics selected was obtained in 56 per cent. of cases of "irritable heart" and in 38 per cent. of the controls, but the contrast between the two classes becomes far more striking when certain of the individual items are compared. Thus with reference to nervousness in the family history, there are 45 per cent. among the "irritable heart" group, and only 15 per cent. among the controls; in regard to insanity and epilepsy there are 23 per cent. and 15 per cent. respectively in the families of cases of "irritable heart," and none among the controls.

Personal History.

In Table II the contrast between cases of "irritable heart" and the controls is still greater. The percentage of cases with a positive personal history of psychoneuroses is 51 among cases of "irritable heart," 12 among the controls, and of those with positive family and personal history there are 46 per cent. among the former group and but 6 per cent. among the latter. As to the individual items, the predominance of certain characteristics among cases of "irritable heart," as contrasted with the controls, should be especially noted—namely, the prevalence of previous nervousness, of a history of epilepsy or fits, of previous breakdown, of moodiness, and of enuresis. It is well known that sufferers from "irritable heart" are apt to be teetotalers and are sexually not very active; this latter fact may account for the low percentage

TABLE II.—*Percentages of Characteristics named in the Personal History of Cases of Neuroses, of "Irritable Heart" of Soldiers, and of Controls (that is, Wounded).*

	Neurosis.	"Irritable Heart."	Controls (Wounded).
	Per cent.	Per cent.	Per cent.
Stigmata	34	12	4
Previous nervousness	66	46	12
Fears	50	31	8
Head injury	38	5	12
Epilepsy and "fits"	8*	5	0
Tobacco—excessive...	8	1	4
Alcohol—excessive	6	0	16
Alcohol—teetotaler	48	36	20
Married	42	18	28
Moody	55	27	8
Previous breakdown	2	21	0
Enuresis	12	14	4
Frights in childhood	4	19	0
Excessive religion	6	6	0
Positive personal history... ...	76	51	12
Positive family and personal history	70	46	6

* As stated in the text, the data in the neuroses and the controls are reprinted from Captain Wolfsohn's valuable paper; in his figures, however, epilepsy only was considered, whereas we have also included "fits" which may or may not have been true epilepsy.

(18 per cent.) of married men in this group as compared with 28 per cent. among the controls and 42 per cent. among the psychoneurotics.

Of the 100 cases analysed, 61 gave a positive family *or* personal history for psychoneurotic factors. Of these, 46 gave a positive family *and* personal history—a group which we will call Group I to distinguish it from Group II, which consists of 39 cases with a negative family and personal history. As regards previous occupations in civil life, it is remarkable that cases in Group I followed largely sedentary and light occupations (10 sedentary, 27 light, and 9 heavy), whereas of those in Group II some did light, but more did heavy work (2 sedentary, 17 light, and 20 heavy). The average duration of foreign service proves less in the average in Group I than in Group II; thus the average foreign service of Group I is thirteen months, and of Group II nineteen months; but the real difference between the two types is seen in a comparison of the *character* of the military service rendered; only 4 out of 46 in Group I did full duty, as contrasted with 33 out of 39 in Group II.

Character of Service.

It is very evident, after detailed study of the cases, that the patients in Group I, from a military point of view, gave such a poor account of themselves as to make one doubt whether it was worth the time and expense devoted to them in training, etc. On the other hand, those in Group II certainly did at least the military duty of an average soldier.

The Causes of Invaliding.

The causes of invaliding were studied in all the 100 cases, and it is notable that among the cases in Group I there is frequently, in fact in 20 out of 46 cases, nothing definite; on the other hand, in Group II there is more frequently a definite precipitating cause, such as an infection like trench fever or dysentery, prolonged service, gassing, or shell explosion.

Constitutional Physical Asthenia.

The sharp contrast between the two groups goes further than difference in their family and personal histories as regards neuropsychic factors, occupations in civil life, or duration and character of foreign service. A history of constitutional asthenia was obtained in almost 70 per cent. of Group I cases and in only 12.8 per cent. of Group II.

By the rather vague term "constitutional" asthenia* is meant an inferiority or anomaly in the assemblage of inherent characteristics, both functional and morphologic, which go to make up the organism. Among the constitutionally asthenic we include those who have always been short of breath, have been unable to play the more strenuous games or keep up physically with the average of their fellows, have fainted or become dizzy easily, have blushed readily, perspired too profusely, and have suffered from cold extremities. There appear to be two types of such individuals—first, those who are weak and poorly built, or may have a "habitus"; and, second, those who to all appearances are muscular, strong, and robust, and yet for some unknown cause have had symptoms such as dyspnoea on exertion from youth up.

One may also include under this term patients who have a habitus, such as the narrow-chested or splanchnoptotic, those who have given evidence of a diathesis such as the haemorrhagic, the exudative, the lymphatic or the spasmophilic, and those having a dyscrasia or belonging to certain types such as the vagotonic, angeiospastic, erethistic, feminine, eunochoid, etc., or those showing definite evidence of disturbance of the endocrine organs. Attention has been directed for many years to this whole question of constitution by F. Kraus; it is impossible to enter into the subject here, but it must be emphasized that, apart from neuropsychic factors, there is a constitutional tendency in certain individuals which predisposes them to the development of the "irritable heart" syndrome.

Juvenile or Developmental Vaso-neurotics.

From a study of the personal histories, it is believed that many cases of "irritable heart" of soldiers are the mature individuals who during their developmental period presented vaso-neurotic symptoms. Of the 46 cases in Group I, 32 cases (70 per cent.) showed symptoms of constitutional physical asthenia before the age of 17. Of these, 13 had symptoms as long as they could remember. Of the remaining 19, the age at which symptoms of constitutional weakness first manifested themselves ranged from 8 to 16, at an average of 11.8 years for those who could recall approximately their age when the symptom or symptoms appeared. (Two other patients dated the appearance of their symptoms to their twenty-second and twenty-third year respectively, but as the symptoms appeared so late, it is not certain they belong to the same group.)

Apparently hitherto no attention has been paid to a very important fact, that a syndrome identical with that of "irritable heart" occurs not infrequently in children[2] especially associated with orthostatic albuminuria.†[3] These symptoms usually arise in children at the school age, 8 to 14, and are "chiefly those referable to the cardio-vascular system, namely, dyspnoea on exertion, palpitation, precordial pain, headache, fainting, hypersusceptibility to cold."

It seems highly probable to us, therefore, that the adult cases of "irritable heart" which give a previous history of similar symptoms at the prepuberty age, or as far back as they can recall, have been children who are then recognizable as suffering from "vaso-neuroses," "dilatative weakness," etc.

Difference in Symptomatology of the Two Groups.

In comparing the symptoms in the two groups of cases—that is, those cases with and those without psycho-neurotic factors in their family and personal histories—it is noteworthy that, in general, soldiers in Group I complain almost invariably of chest pain among their other symptoms—indeed, these patients are apt to "stick it" until pain develops, then they become alarmed and report sick. Patients of Group II rarely complain of chest pain, but suffer more from exhaustion and weakness; they are "done up," to use their own expression. One case may be cited belonging to Group II which illustrates that an acute infection may be the cause of the "irritable heart," that these symptoms may then disappear and leave simply exhaustion. The patient referred to broke down after prolonged service and trench fever with breathlessness, which disappeared after a fortnight, leaving him with weakness, exhaustion, and nervousness, but no dyspnoea or pain. The post-infectious cases of "irritable heart" are more apt to present exhaustion symptoms and only exceptionally pectoral pain.

There is perhaps a certain parallelism between these two groups of "irritable heart" and cases of war neuroses. If we understand Dr. Rivers correctly, certain cases of shell shock result in repression neuroses, the *anxiety* neuroses, while those resulting from exhaustion or infection manifest themselves as *exhaustion* neuroses (neurasthenia). Similarly, in a general way among cases of "irritable heart" there are those belonging to the constitutional group, who suffer from chest pain, etc., and those who belong to the exhaustion or the post-infectious group, who have fatigue symptoms, but rarely much pain.

* In the British army "constitutional" is a term used on certain documents of the medical boards as an equivalent of the term "pre-enlistment"; a condition is termed constitutional if it existed before enlistment.

† We examined 30 unselected cases of "irritable heart" and found one with orthostatic albuminuria. Orthostatic albuminuria usually disappears at puberty, but may remain in adult life. We have observed Chvostek's sign repeatedly among soldiers suffering from "irritable heart."

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THE CHEMIOTHERAPEUTIC TREATMENT OF GONORRHOEA.

BY

J. E. R. McDONAGH, F.R.C.S.

IN two previous articles[1] I have described the action and use of colloidal manganese in gonorrhoea, and shown that this drug was most efficacious in the acute stage. As every day lost before commencing treatment is important, and as there is some delay after injecting manganese before its maximum oxidizing power is reached, it occurred to me to precede manganese by a metal, which would act instantaneously by dissociating certain hydrogen and hydroxyl groups in the serum. For this purpose I used a colloidal preparation of palladium, which is now known as "pallamine."* Palladium has the action of liberating the hydroxyl group (OH) from H.OH and temporarily fixing the hydrogen group (H). The moment the discharge appears 0.5 c.cm. pallamine should be injected intramuscularly, and the same dose repeated two or three days later. In some cases a third injection may be given, but no more than three, because the disease is sure to be aggravated. This aggravation is probably due to the liberation of the temporarily adsorbed hydrogen, which increases the "acidity" of the serum or depresses the important hydroxyl (OH) ion concentration. Irrigations are carried on in the usual way, but the moment the discharge ceases to be purulent, zinc permanganate or zinc sulphate 1 in 10,000 should take the place of potassium permanganate.

Patients get well quicker on a milk than on an ordinary diet, and at present I am prescribing potassium nitrate or methylene blue internally, on the theory that the liberated hydrogen can be used by reducing the former to a nitrite and the latter to its leuco-base, two products less innocuous than hydrogen. When potassium nitrate is being taken sodium chloride should be eliminated from the diet as far as possible.

As to whether these two drugs really aid the cure I am not able to say, as to make sure would necessitate experiments carried over several months. If the case is not well by the sixth day, 0.5 c.cm. colloidal manganese should be injected intramuscularly, and repeated every second or third day until no sign of the disease is left. As a rule one to three injections are necessary. It is unwise to exceed the dose of pallamine above given, except in cases of recurrent purulent urethritis when other methods employed to stop the discharge have proved unavailing. In such a case 1 c.cm. can be injected with benefit. The injection of manganese at the same time as pallamine has not given good results, but injecting them alternately has proved efficacious, though it is not so good as injecting pallamine first and colloidal manganese afterwards. After the first injection of pallamine the discharge becomes thinner, although it may not diminish very much in quantity.

* Pallamine can be obtained at Crookes's Laboratories, 50, Elgin Crescent, W.11.

After the second injection the discharge ceases or becomes muco-purulent. The cases which respond least to the treatment are those in which the discharge is very thick, profuse, and of a dark yellow, greenish, or brownish colour.

So far I have treated fifty cases of acute gonorrhoea (first attacks), with an average rate of stay under treatment of 8.5 days. One case relapsed, one case developed epididymitis, and two cases developed prostatitis. I have every reason to hope that when this treatment is perfected we shall be able to get rid of acute gonorrhoea cases in one week.

REFERENCE.
[1] *Practitioner*, January and May, 1918.

THE TREATMENT OF THE PREGNANT AND PARTURIENT WOMAN AND THE PREVENTION OF MATERNAL AND INFANTILE DEATHS.

SEVERAL circumstances during the last few weeks have combined to turn the attention of the profession as well as of the public to the need for improvements in current methods of providing for the health and welfare of the mothers of the country and their infants. During Baby Week an immense amount of good propaganda work was done, but such work necessarily involves the repetition of facts and arguments with which those who have given attention to the subject are well acquainted and with which all members of the medical profession are familiar. We do not propose to attempt to report the many meetings held and demonstrations given, but have selected two papers by medical speakers which contain suggestions of value to members of the profession.

NEONATAL LIFE—AND DEATH.

BY

DR. J. W. BALLANTYNE,
Edinburgh.

AMONG the subjects discussed at the annual meeting, named "Baby Week," of the National League for Health, Maternity, and Child Welfare, was that of the factors which go to produce infantile mortality. The subject was introduced by Dr. Ballantyne, who said that if all the work being done, some of which at least was rather outside strictly medical boundaries, was to result in a real and early saving of lives, maternal and infantile, it must be built upon sure and deeply-laid foundations. Dr. Ballantyne raised this aspect of the matter by asking what were the true causes of infantile mortality. Did babies die in the first year of their existence after birth on account of the impact of dangers then coming into play, such as a germ-laden environment and errors in feeding and housing and the like? Or did they die because of morbid influences which had been at work before birth and had acted mainly through the mother who was then the unborn infant's environment? Were both these factors, the post-natal and the ante-natal, at work, and were they in a measure reinforced by the events of birth itself, the intra-natal factor, as it might be called?

The Ante-natal, Intra-natal, and Post-natal Periods.

The fair conclusion seemed to be that the deaths after the first four weeks of life (the neonatal period) were mainly due to the truly post-natal causes, the zymotic diseases and the health errors, although the dangers arising from these causes were undoubtedly increased or lessened by what had occurred during and before birth. On the other hand, the deaths before birth, as compassed by abortions or seen in stillbirths, were, he believed, mostly caused by ante-natal conditions, and these, in so far as they were not due to the father, were maternal in origin. There was, however, another division of the stillbirths—that in which death only supervened during the act of birth, "the intra-natal stillbirths," and these were obviously due to purely obstetric happenings, disproportion between the size of the pelvis and the child, haemorrhages, etc. The three factors were distributed, therefore, mainly along these lines, the post-natal factor acting mainly after the first four weeks of life, the ante-natal acting chiefly before it, and the intra-natal being at work in the birth itself. Child welfare work was concerned mainly with the care of the child after the first four weeks (after the neonatal period), whilst mother welfare work was concerned with the child as reached through the mother, before and during birth—that is, before the neonatal period. The two lines of work were allies, the one trying to repel the attacks of disease and death after the neonatal period was over, and the other defending the unborn child against them before it had begun. The allies were pediatrics and obstetrics, and the first four weeks of life constituted their point of contact.

The Neonatal Death-rate.

Dr. Ballantyne said that this junction would almost certainly be the spot where death's attacks would be most dangerous, and where consequently the health-forces' resistance ought to be strongest. It was, therefore, of immense importance that the state of matters at this junction should be closely scrutinized. In other words, there was need for an intensive study of the neonatal period of life, both scientific and statistical. With regard to the former it must be admitted that everything was not well. Life and death during the first four weeks of life were complicated; all the factors—the post-natal, the intra-natal, and the ante-natal—were at work in this fateful neonatal period, and physiology, pathology, and scientific medicine had not yet evaluated and analysed their respective influence. No one was familiar even with the actual deaths which occurred on an average in these four weeks. Statisticians grouped all the deaths in the first year of life together under the head of infantile mortality, and expressed it by the infantile mortality-rate—that is, the number of deaths per 1,000 live births which occurred in the first year of life. Dr. Ballantyne urged that the neonatal deaths should be separated from those of the remaining forty-eight weeks, and should be stated separately in all health statistics. From the Edinburgh figures, in which this separation had been made for a few years, he had calculated a new rate, the neonatal death-rate. By that was meant the number of deaths per 1,000 live births which occurred in the first four weeks of life. This new rate revealed many interesting features. One was its height. Instead of being, as it might possibly have been expected, one-thirteenth of the total infantile mortality rate, it was over a third of it, and in one year it had come within dangerous proximity to a half. Incidentally it was pointed out that the neonatal rate among the illegitimately born babies had in one year in Edinburgh been exactly double that among the legitimate (as 76 per 1,000 to 38 per 1,000), but in another year they had been the same. So that in this respect the neonatal rate was not behaving like the infantile rate—at least, it was not constantly following it.

It was obvious that the neonatal four weeks called for scrutiny from health workers and from scientific medicine alike, if only for the reason that so many babies died in them. Yet, as a matter of fact, little attention was paid to them. In courses of lectures on obstetrics and pediatrics, for instance, little space was given to the physiology and pathology of the newborn infant. Neonatal diseases lay between the two territories of the obsetrician and the pediatrist and ran the risk of being incompletely occupied by either. Yet they were most interesting weeks, for in them all the factors were seen in action—the post-natal, intra-natal, and ante-natal—and it would be of great value to disentangle these factors and give to each its value as a threat to life. To the complex group of morbid causes thus acting the name "neonatal factor" might be conveniently given.

If this new mortality rate (the neonatal) were supplied, the danger in the first four weeks would be made clear and some of its characters would be recognized. The neonatal period of life should be more carefully studied by the physiologist and the pathologist also. When these and other things springing from them had been accomplished mother and child welfare work would stand on much surer foundations and have greater hopes of striking successes. Already there had been a measure of reward for all the work doing, but, unless the foundations on which the propaganda was being built up were secure, disappointment with the immediate results might lead to discouragement, or, still worse, to discontinuance of effort. Good had already been accomplished and the work must go on, but it would go on all the better if the difficulties were fully known and appreciated.

THE MATERNITY HOSPITAL AND ANTE-NATAL CENTRES.

BY

DR. COMYNS BERKELEY,

London.

THE following is the substance of an address given at Leeds on June 26th:

The agencies at present concerned with the preservation of the life and health of the pregnant and puerperal mother and her child might be classified into (1) the workers—midwives, doctors, health visitors, voluntary workers, and the municipal authorities. (2) The pregnant woman herself. (3) The local centres—various associations set up in different parts of the kingdom, of the nature of ante-natal and post-natal maternity centres, child welfare and baby welcomes, etc.; and (4) the consultative centre, including the maternity hospital (or beds set apart in general hospitals or infirmaries).

Midwives.

Out of every 100 pregnant women in England and Wales 75 are attended in their confinement by midwives, and the majority of these midwives are untrained. The midwife could help by sending or taking her patient to some local centre in her neighbourhood and by filling up her register in an intelligent manner, so that the health visitor or inspector of midwives would be able to advise her when she should recommend the patient to a local centre. The midwife was thus able through the local centre to give her patient, among other things, the benefit of the service of the consultative centre. With the exception that the pregnant woman could go to an ante-natal centre or not as she pleased, or could decide upon this or that centre if she wished to attend one, of all the people comprised in these schemes for treating or helping the woman, the midwife was the only person whose services the woman could deliberately select. The midwife, therefore, was treated by these women as their confidant, and would have much more influence than, say, the voluntary worker, the doctors at the centres, the health visitor who was an official of the municipal authorities, or the employers. It was most necessary to enlist the sympathies of the midwives, to show them that such schemes, far from interfering with their means of livelihood, would be the means of enhancing it, and far from giving them more trouble, would relieve them of a certain amount of responsibility, especially of that kind which they ought not to undertake. Trained midwives were the better able to judge of the value of such schemes, but the untrained midwives were not unnaturally suspicious of the various agencies at work, more especially when they had an official touch about them as evidenced by the activities of the Public Health Department.

All schemes started for the welfare of the pregnant woman should encourage a larger supply of trained midwives in the district served by the particular scheme. In this way the consultative centre, as a training school, might be of the greatest help.

Health Visitor.

The health visitor should be encouraged to work with the midwife, and they should report to one another. The health visitor must not interfere with the medical or surgical treatment of the mother or child; her duty was to watch their surroundings. The majority of children died in their first year from diarrhoea, a result in most cases of deficient personal and domestic cleanliness, and unsatisfactory facilities for storing or preparing food, and bad sanitary arrangements. The health visitor could supply the local centres almost as much as the midwife or doctor, and her presence should always be welcomed at the consultative centre.

Employers.

Industrial employment tended to increase infant mortality in various ways. With the present inadequate arrangements for the pregnant factory hand, employers did not care to have such women working for them, and in most cases when their pregnancy became obvious—about the fourth or fifth month—the services of these women were dispensed with. Pregnant women could not do so much, or, as time went on, such good work. Then, especially with heavy work, there was always the increased risk of miscarriage or premature birth, and the employer was faced with the possibility of a demand for compensation. From the moral point of view, also, many employers objected to have men and pregnant women working together, more especially if the women were not married. Knowing all this, the woman was apt to conceal her condition as long as she could, instead of disclosing it as soon as possible; and, moreover, large numbers of them, undoubtedly for the reasons mentioned, endeavoured to get rid of their pregnancy, in many cases successfully, though too often with serious results to their health.

In the case of a pregnant woman who had to earn her own living, the loss of wages or the insufficient wages she was able to earn in pursuits other than her regular work reacted on her general nutrition and on the well-being of her unborn child. Many a pregnant woman who had already one or more children and a home to keep up would deny herself proper attention and nourishment. Industrial employment also separated the mother from her child after birth and interfered with and often prevented breast feeding.

Employers, therefore, must be encouraged to co-operate and be brought to realize that not only was it their duty as citizens to do all they could to take action to decrease infant mortality and increase the health and well-being of their employees, but also that, as a matter of fact, such action would redound to their individual benefit. In a large factory in Liverpool, the owners of which had entered heart and soul into the ante-natal and post-natal welfare of their women employees and their children, they found that the work was much better and there was much less trouble.

The Welfare Department of the Ministry of Munitions had a scheme in the three national factories in Leeds, by which women five to seven months pregnant who had been on heavy work were placed on light work, and from the seventh to the ninth month were segregated in a special department, where they did sewing and were paid by piece-work. There were separate dining rooms in which a free meal was provided, and retiring rooms in which the women could rest. They were paid at the rate of 7d. an hour, and the average wage earned was 21s. 6d. a week—a satisfactory result when it was considered that otherwise they would be earning nothing. In addition, a trained woman supervisor looked after these women and arranged for their attendance at local or consultative centres, if necessary. Employers should be encouraged and persuaded to support financially and otherwise the local or consultative centres.

The Notification of Births Act gave certain opportunities and facilities to the municipal authorities. Cases of puerperal sepsis must be reported to the M.O.H., and this enabled him to inquire into the cause. Again, the municipal authorities could make grants to local or consultative centres, reimbursed by the Local Government Board up to 50 per cent. of the total expenditure for the medical treatment and nursing of patients duly recommended, and in the case of syphilis up to 75 per cent. The assistance included the provision of sufficient food and dental treatment. These authorities had the power also to provide a doctor or properly trained midwife in necessitous cases, or to make part payment to doctors and midwives, but for various reasons many municipalities had not been keen to exercise these powers. As stillbirths after the twenty-eighth week must be notified to the M.O.H., the municipal authorities could make a very important contribution towards elucidating the causes of these complications. It was estimated that the total intrauterine deaths during the course of pregnancy equalled the total deaths of children during their first year of life. A large number of these abortions, miscarriages, and stillbirths could be traced through the medium of the doctors, health visitors, midwives, and local centres.

The Pregnant Woman.

Everything must be done to encourage the pregnant woman to take an interest in the scheme, and to induce her to notify her pregnancy voluntarily, not compulsorily. The majority of pregnant women did not consult a doctor until in many cases the opportunity of dealing successfully

with complications, such as contracted pelvis and albuminuria, was very much diminished if not lost. Dangerous labours and severe albuminuria complicated with eclampsia were comparatively rare in women of better social position because they had in most cases engaged a doctor early in pregnancy. Pregnant women should be encouraged to attend local centres and so indirectly consultative centres, so that the diseases and complications of pregnancy might be identified and dealt with at the earliest opportunity.

Local Maternity Centre.

A local maternity centre must be within easy reach of the women it proposes to help, and attendance must be made as easy as possible for them, and they must not be required to spend very much time there.

Each local centre should have a strictly defined area; the best results were to be obtained by co-operation, not competition. Thus in a town there should be a standing committee composed of a representative or representatives from each local centre, and including among its members representatives of the women it was proposed to help, chosen perhaps from women's associations where such existed. Each local centre should be in touch with the doctors and midwives and voluntary workers in its area, as also with the consultative centre. The doctors of the neighbourhood should be encouraged to take a particular interest in these local centres, for it was only so that the consultative centre would be able to do its best work.

"I know," Dr. Berkeley said, "that it is considered by many that as far as the medical part of the work at these local centres is concerned, it should be under the care of a paid officer, preferably a woman, who should be an official of the Public Health Department. Such a provision has doubtless many advantages, but they are outbalanced by disadvantages. The medical practitioners in the neighbourhood should be consulted as regards the organization of the local centre. Members of the civil community, when any of the members of their family fall ill, have to employ a general practitioner. If all the work which really belongs to him is gradually taken out of his hands—and it is necessary only to think of the tuberculous and syphilitic centres and maternity centres, run by a paid official of the municipal authorities, to realize what is meant—the family doctor will become a mere guide to the nearest specialist or institution, and his status and capacity will be gradually undermined."

The medical service at the local centres should therefore be carried out by the local practitioners. They should arrange among themselves a rota by which each agreed to serve for a certain period—not too short—regularly, once or twice a week at a certain specified time, so that the patient on her return visit would be seen as a rule by the same doctor. The danger that the doctor on duty would be seeing the patients of another doctor was not as real as had been assumed; if every practitioner had his chance of being on the staff of the centre, the risk would be the same for all. There could not be a specialist at every woman's door, and if the doctor who must attend her in her emergency or for her so-called trivial complaints had had all the backbone and interest in his work taken out of him by having the really interesting medical work handed over to a paid official, the result to the community must be bad. Not the least important point was that the paid official would be unable to attain that free access to the homes of these pregnant and puerperal women which was open to the family practitioner.

The institution of factory centres or centres between groups of factories was a matter of importance. The work of a particular factory might comprise labour of all kinds—heavy, medium, and light—and in that case it would probably be found that as the women progressed in pregnancy they could be shifted from heavy to light work. In other factories, where only heavy or only light work was done, the employers might be able to arrange among themselves for an interchange of workers. The establishment of such centres would greatly reduce the time the women would have to be away from work, if they asked to attend a centre. If crèches also formed part of such schemes, then the all-important question of breast-feeding would be partly solved. It was now customary to train women to nurse their infants at longer intervals. It was better both for the mother and her child.

The Consultative Centre.

The functions of a maternity hospital or maternity department of a general hospital were:

1. To act as a consultative centre to the local centres.
2. To act as a training school for midwives, doctors, and health visitors.
3. To undertake research work.
4. To provide beds for pregnant, parturient, and puerperal women.

To the consultative centre pregnant and puerperal women and women in labour, as well as infants and children, could be referred from the local centres or from doctors and midwives for advice and treatment if necessary. Arrangements must be made for a medical practitioner expert in obstetric medicine to be in attendance at a certain hour, for a certain time, on a certain specified day or days each week.

The aim of the consultative centre was to encourage the doctor or midwife, as the case might be, personally to bring the patient, to be present at the necessary examination, to discuss the condition of the patient, and to learn what treatment was advisable, and how best it might be carried out. To meet the case of the doctor or midwife being unfortunately unable to attend with the patient there should be printed forms, the same for all local centres, on which should be entered the reasons why the patient was sent to the consultative centre, and what assistance was required. The medical officer of the consultative centre should write on a special form a full report on the case and the treatment he advised, and should send this form to the doctor or midwife. If it be deemed advisable that the patient should continue to attend the consultative centre the requisite arrangements should be made, and provision made to secure the services of an expert obstetrician for such a patient if confined at her own home.

When a local centre was first started the consultative centre would probably have more work from it than later on. With time and experience, the local centre would treat more cases of its own. There must be a mutual understanding, for the consultative centre must not be a rival to the local centre, neither must pride in the local centre prevent its officials sending their patients to the consultative centre.

Training School for Doctors, Midwives, and Health Visitors.

To be able to carry out these duties efficiently the maternity hospital must have a local centre of its own, for, though it was the consultative centre for the whole district, nevertheless it was a training school also. The local hospital centre should be a model of what all local centres should be, so that students trained at it would be in a position to help to start or assist the work of local centres on the most approved lines. The local hospital centre, however, must not compete unduly or unfairly with other local centres in its neighbourhood.

The consultative centre should be regarded purely as a teaching centre, and should deal principally with those patients who personally applied direct to the hospital, and not through the midwives and doctors, to be confined either as in-patients or out-patients. Women who were to be confined by midwives or doctors of their own choice should attend the local centre nearest to where they lived. The local centres must look on the consultative centre as their friend, to make use of if they wished, and as really part of their own organization and a place where they were always welcomed. The officials of a consultative centre should be easy of access, in sympathy with the work being done at local centres, and interested in ante-natal and post-natal work beyond the limits of medical and surgical supervision.

Research Work.

The consultative centre would have pathological and chemical laboratories at which research work could be undertaken. Syphilis, for instance, was a common cause of abortion and miscarriage, and the recognition of this cause would necessitate a clinical examination of the patient at the local centre and a confirmatory diagnosis, either by examination of the products of the pregnancy, which might result in the detection of the spirochaete, or by the examination of the maternal blood for the luetic reaction. Such work was properly carried out at the

consultative centre; the requisite treatment could be applied in the case of a patient of a midwife, or prescribed if the doctor wished to carry out the treatment himself. Again, the toxaemias of pregnancy called for research which could only be carried out at a hospital properly equipped for such purposes.

The various local centres, by making use of their opportunities of obtaining material in cases of abortion and miscarriage, or of stillbirth, and by using the Research Department of the hospital would be doing a great deal for the better understanding and treatment of the diseases causing the death of the child before it was born.

Beds for Complications occurring in Pregnant, Parturient, and Lying-in Women.

A certain number of beds should be set apart in the maternity hospital for the reception of pregnant, parturient, and lying-in women suffering from complications, and the local centres should have the right to send such patients for admission and treatment without the troublesome, but perhaps with some hospitals necessary, formality of procuring in-patient letters, or the personal application to the hospital authorities. In Glasgow it had been found that thirty ante-natal beds were sufficient for the service of the large number of local centres there. The local centres should work so well with the hospital that a letter from the proper official of the centre that the case ought to be admitted should at once ensure admission if there were a vacant bed. The maternity hospital should also have beds for the immediate admission of patients of a local centre who were in labour and had some serious complication, and required expert treatment they were not able properly to obtain. It was probable, for instance, that the lives of many women suffering from puerperal sepsis would be saved if they could be admitted to hospital directly the symptoms declared themselves. For such cases separate wards or blocks and separate nursing staffs would be required, but at least 50 per cent. of the expenses could be recovered through the Local Government Board. Again, a laceration of the genital canal might heal without any outward symptoms and yet the health of the patient be handicapped for the rest of her life, whereas, if she could have been admitted to the hospital, the laceration could have been efficiently treated and the patient in the end be none the worse.

Again, with a consultative centre situated at a general hospital or at a maternity hospital working in friendly agreement with a general hospital, facilities would be available for the proper treatment of such illnesses as heart disease or tubercle discovered in patients attending the consultative centre, but not directly attributable to their pregancy; their in-patient or out-patient treatment could be arranged. Likewise surgical treatment and the treatment of infants and children could be undertaken in the best possible circumstances.

Reviews.

THE GERMAN MEDICO-MILITARY MACHINE.

IN a small pocket manual entitled *Lessons from the Enemy*,[1] Major JOHN R. MCDILL, of the Medical Reserve Corps, U.S. Army, gives a very compact and readable account of the German medico-military and voluntary aid systems of care for the sick and wounded in the war, compiled from official publications and from first-hand study of the combined systems at work. The administrative methods of the German sanitary service and the general organization of medical units from front to base are clearly described, with copious illustrations and diagrams, including one on a large scale showing the disposition of regimental dressing stations and advanced hospitals, which, whenever possible, are placed beside railways. Special emphasis is laid on the system for re-education of the disabled in orthopaedic hospital schools and workshops. In this section the author shows how Germany has applied all her powers of organization and attention to detail to the task of caring for and training those disabled in the war, so that they may be fit to do further work for the fatherland. Collaboration between the military and civil authorities, in concert with industrial and trade organizations and with polytechnics and commercial schools, is effected through a body known as the Welfare Commission for the War Disabled, which is organized on the most comprehensive scale throughout the empire.

Almost every page of Major McDill's manual seems to bear witness to his admiration for the efficiency of the German medico-military machine. The only criticism we have to make is that in some respects he may have taken the Germans too much at their own valuation. Thus we are a trifle amused to read, on page 115, that "a new fever has recently been discovered by a pupil of His, which they have named 'Volhynian fever' (trench fever)." On the same page reference is made to the immediate prophylactic serum injections against gas gangrene, which are given as a routine measure in all shell wounds; but it is impossible to accept the statement that there is now practically no gas gangrene among the wounded in the German army. We note that Dakin's solution is widely used in the treatment of wounds, and bears the name of "Dakins-lösung" in the official Prussian list of drugs and medicines; it is strange that they have not claimed it as a German discovery.

On the whole it would appear from study of Major McDill's excellent handbook that our own Army Medical Service has little to learn from the enemy, although it may be that methods of organized after-care were got sooner into order in the country which at first "had more of everything in every department," and in which preparations for war had been going on for many years, "not only by the army but by numerous civic organizations preparing to lend essential assistance when a state of war occurred." Whether the position in Germany is now any better than in this country is not very easy to determine, but allowing for differences in the machinery of local administration it would seem to be very much the same. Major McDill has an interesting section on amputations, from which it appears that the use of crutches is discountenanced, the patient being encouraged to walk with his thigh stump on a stilt; shortly afterwards he is supplied with a temporary appliance similar to that devised, we believe, first in Belgium, and now in general use in this country. Major McDill gives a long description, with many illustrations, of a working arm, for upper-arm amputations, which can be fitted with appliances suitable for various sorts of work. It is calculated that with it a man can do one-half to two-thirds the work of a normal man, or even more than this. It seems to be practically identical with that described by Captain Martin Huggins as fitted at Roehampton House, and, we believe, at other hospitals for the limbless in Great Britain. Nothing seems to be said as to apparatus for forearm stumps; the Welsh arm, invented by a miner for himself some forty years ago, seems to be the best working arm yet devised for such cases. Those who desire an adequate account of what is being done in Germany in the matter of artificial limbs should consult the June number of the *Medical Supplement* (His Majesty's Stationery Office, 1s. net), compiled by the Medical Research Committee. The most original appliance appears to be Ritschl's spring foot, designed, by the use of steel wires, to yield a little to pressure and to adapt itself to the surface trodden on.

[1] *Lessons from the Enemy: How Germany Cares for her War Disabled.* By J. R. McDill, M.D., F.A.C.S. Medical War Manual No. 5, authorized by the Secretary of War and under the supervision of the Surgeon-General and the Council of National Defence. Philadelphia and New York: Lea and Febiger. 1918. (4½ by 6 in., pp. 275; 145 figures. 1.50 dols.)

THE STAGES OF THE WAR WOUND.

IF the Collection Horizon had given us no more than Professor POLICARD'S little book on the evolution of the war wound,[2] it would have served a great purpose. Judged from the clinical point of view, a dozen different opinions may be held as to the propriety of this and that operative scheme; of this period or that for operation at all; and consequently of this or that position, with regard to the front line, for operating centres.

Any administrative officer who will read and re-read this elementary book until he understands thoroughly what goes on in war wounds will grasp the principles which govern the whole matter. Everybody knows that all wounds must be considered infected; everybody agrees

[2] *L'Evolution de la Plaie de Guerre.* By A. Policard, Prof. agrégé à la Faculté de Médecine de Lyon. Paris: Masson et Cie. 1918. (Cr. 8vo, pp. 191; 49 figures. Fr. 4.)

that inert, dead, and infected matter should be removed as soon as possible; everybody thinks he uses an antiseptic fluid at once efficient and innocuous. So far good; but here in simple and easy language is the history of the wound hour by hour, day by day; here is the reason for the faith that is in us, so convincingly put that even if the author be wrong in some of his speculative asides he is certainly right in much that we have all put to the test of experience—sometimes, perhaps, with eyes that see not. The inestimable value of the first eight hours is thrust upon one; the part played by the leucocyte as a unicellular digestive gland, not as a mere gluttonous amoeba, needs but the showing. Not that Metchnikoff's descriptions or his beautiful pictures are likely to be forgotten, but it is high time the chemical basis of intoxication should be more fully appreciated and attention be turned to the secretive rather than the physical activities of the cells.

The author gives an original picture of the whole process of repair in wounds, and every word should be read, but it is his crisp, clear account of action and reaction between germ and host we particularly commend to practical attention.

NOTES ON BOOKS.

THE standard textbook on *Medical Electricity*[3] by the late Dr. LEWIS JONES has been brought up to date and edited by Dr. L. W. BATHURST. Beginning with a general account of the subject and the apparatus employed, extending to about half the volume, it describes the use of electrical treatment of all sorts in disease. Roentgen rays and radium receive a chapter, and the whole book is well illustrated. It should be in the hands of all medical electricians.

A general account of the problems of the science of nutrition and the ways in which they are attacked in the laboratory is given in the third edition of Professor LUSK'S *Elements of the Science of Nutrition*.[4] In this scholarly work, with its many references to the enormous literature of the subject, the reader will find a review of the main facts upon which our knowledge of nutrition in health, disease, and starvation is based. Special chapters are devoted to the metabolism in such conditions as anaemia, goitre, fever, diabetes, nephritis, and gout. The book does not pretend to cater for the treatment of disease directly in any way, but it may be recommended to medical men as a useful guide and work of reference.

[3] *Medical Electricity*. A Practical Handbook for Students and Practitioners. By H. Lewis Jones, M.A., M.D., F.R.C.P. Seventh edition, revised and edited by Lullum Wood Bathurst, M.D.Lond. London: H. K. Lewis and Co., Ltd. 1918. (Demy 8vo, pp. xvi + 588; 197 figures, 14 plates. 15s. net.)

[4] *The Elements of the Science of Nutrition*. By Graham Lusk, Ph.D., Sc.D., F.R.S.Edin., Professor of Physiology at the Cornell University Medical College, New York City. Third edition, reset. Philadelphia and London: W. B. Saunders Co. 1917. (Med. 8vo, pp. 641. 20s. net.)

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

MEETINGS OF THE EXECUTIVE COMMITTEE.

AT a meeting of the Executive Committee at the *Lancet* office, on June 19th, a letter was read from the Commission for Relief in Belgium stating that the subsidies of the Fund always reached those for whom they were intended, and were of enormous value and moral support. A long statement was enclosed from the Belgian Commission Mixte sitting in Brussels. Dr. Des Vœux stated that the Fund had now only £600 to its credit; a further subsidy was due to the Committee at Brussels in July, which meant the virtual end of the Fund unless appeals proved more fruitful. Dr. Herbert Spencer said that the profession apparently did not believe that the money reached Brussels, but was chiefly distributed among Belgian doctors in this country; and several members agreed that this was a prevalent feeling despite the denial repeated in the medical and pharmaceutical press. It was decided that for the present the appeal should be made to medical men and pharmacists only, but that they should be asked to bring the urgent need of the Fund before their friends.

At a meeting of the Executive Committee on July 1st Dr. Des Vœux reported that Sir Rickman Godlee's letter, published in the BRITISH MEDICAL JOURNAL and the *Lancet*, had produced good results. The publication in the *Pharmaceutical Journal* of excerpts from the statement of the Commission Mixte had also proved useful. The mensuality of £400 for July would be sent off.

The following passages from a letter to Dr. S. Squire Sprigge, Honorary Secretary to the Fund, from the Assistant Director of the Commission for Relief, show the need for further substantial aid:

> I need hardly remark that the charities thus in receipt of subsidies through our channels are most carefully administered, and there is no possibility of any leakage on the way. I would like, however, to repeat—nor can we emphasize this point too strongly—that the need of help for Belgium grows with every day, and the reports which we receive from all branches of the work are nothing short of heart-rending. . . . Your Fund is one which reaches a class which cannot be helped in any other way. For the most part the professional men are too proud to come to the public soup kitchens, and after four years of terrible privation any little savings which they may have had are by now exhausted. But they will and do most gratefully receive help from your Fund, and with the assistance thus given them goes a most comforting feeling that their happier colleagues overseas are not forgetting them.

The communication from the Commission Mixte appeals for the dispatch to Belgium of supplies of drugs, of which there is a total lack, so that many practitioners have to resort to inferior alternatives, and many antiseptics are practically unobtainable. The Comité National has organized a Medical Secours and Pharmaceutical Secours. Medicines prescribed by the 2,000 doctors of the service are dispensed by 1,500 chemists throughout the country at a uniform rate, and the Comité pays the bill, which averages 1,500,000 francs monthly. In Brussels a Central Pharmacy, administered by the Comité, manufactures and distributes pharmaceutical products to doctors and chemists, and undertakes dispensing.

The closing passages of this document repudiate the suggestion that money or goods intended for the relief of Belgian doctors and pharmacists and of the general population in Belgium get into wrong hands or are improperly administered.

Similar assurance has been regularly given by the BRITISH MEDICAL JOURNAL, the *Lancet*, and the *Pharmaceutical Journal*.

Subscriptions to the Second Appeal.

The following subscriptions and donations were received during the fortnight ending July 6th:

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* Per Sir Thos. Barlow. † Per Sir Rickman Godlee.
‡ Per Dr. Des Vœux. § Per Sir StClair Thomson.

Subscriptions should be sent to the Treasurer, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W.1, and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

British Medical Journal.

SATURDAY, JULY 13TH, 1918.

INSPECTION OF MILITARY HOSPITALS.

INSPECTORS of military hospitals have, we understand, been appointed in the four Commands which cover the whole of England and Wales, with the exception of London and Aldershot. Major-General Bruce Skinner, C.B., C.M.G., is now Inspector of Hospitals in the Northern Command, Major-General R. Porter, C.B., in the Western Command, and Major-General Sir R. H. Whitehead, K.C.B., in the Eastern Command; Sir Tom Percy Woodhouse, K.C.M.G., C.B., has recently been appointed to the Southern Command. These officers have all held very responsible positions with the armies in the field since the outbreak of war. General Skinner was until recently Director of Medical Services, Fifth Army, France; General Porter was long D.M.S. of the Second Army, and General Whitehead was D.M.S. Malta. General Woodhouse went to France in August, 1914, as principal medical officer of the original British Expeditionary Force, and held that position through the trying experience of the retreat to the Marne, and the subsequent advances to the Aisne and to Flanders. At the beginning of January, 1915—the Director-General, Sir Arthur Sloggett, having taken over the command of the Army Medical Services in France—General Woodhouse became D.M.S. Lines of Communication, an appointment he retained until the end of 1917.

We have not noticed any public statement as to the nature of the duties to be discharged by inspectors of hospitals, but the recent experience of conditions abroad which the officers appointed have had cannot fail to be of great value to the administration at home. Each of the four Commands covers a wide area. The Northern extends from the Tweed to south of the Trent and from the North Sea coast to the Pennines. The Western Command, extending from the Solway to the Bristol Channel, includes Lancashire and the whole of Wales and Monmouthshire as well as the English Border counties. The Eastern Command, extending from the southern border of the Northern Command to the Channel, includes the eastern counties, as well as Kent, Surrey, and Sussex. The Southern Command includes the South of England from Warwickshire to Dorsetshire, and all the southern counties from Hampshire to Cornwall. The number of military hospitals of different kinds in each Command is large. They vary very much in the number of beds they provide, in their equipment, and in the way in which they are staffed. Some of them count their beds in thousands, and have a large staff mainly or altogether whole-time and usually resident. At the other end are hospitals of fifty, forty, thirty, or fewer beds established in a public building in a country town, or in a country mansion lent by its owner. Usually the commandant of such an auxiliary hospital is a resident lady, or, in the case of a country house, its mistress. The nurses are mainly V.A.D. workers, and medical attendance is provided by the doctors of the town or neighbourhood.

The spirit which led to the institution of these hospitals, and has continued to inspire the work done in them, reflects undying honour on British women and on the medical profession. These smaller hospitals are, almost without exception, well managed, and nothing is left undone to make the men feel that they are among friends who desire to do everything possible to make them happy and to restore them to health. They have done well, and without their help the country would have fallen short of its duty to the wounded, the sick, and the broken. But the long continuance of the war and the increased demand each year has made on man power has caused us all to look on many things from a point of view different from that which seemed proper in 1914–15, and it is inevitable that the system which has involved the establishment and maintenance of so large a number of auxiliary hospitals should, along with other administrative matters, be submitted to a closer scrutiny. When this is done two questions arise—one affecting the country generally and the other the medical profession in particular.

The object of hospital treatment is to cure. When in the case of a military hospital this is possible, in the full sense of the word, the man is ready to be sent back to the dépôt of his unit, either direct, or after a time in a convalescent institution or a command dépôt, subject to the customary period of home leave. If a man cannot be cured, the date of his discharge from the army must be arranged and the conditions of his pension settled. The first question is, therefore, whether the best means are being taken for his cure so that he can rejoin his unit, or, in the other alternative, for the greatest amelioration of his condition that medical and surgical treatment can provide, so that he may go back to civil life in the best attainable physical condition and trained to resume his old occupation, or to take up another for which he has become better suited. There are grounds for believing that in not a few instances auxiliary hospitals have been allowed to lapse into being little more than homes affording admirable conditions for recovery if it can be brought about by rest, good nursing, and general medical supervision. But this is not enough, for in such institutions may be found men who have been there too long, whose convalescence is in fact complete, and others who cannot be expected to recover until they have received the treatment provided in a special military institution, of which the neurological and orthopaedic centres may be taken as examples.

Apart from matters relating to the general management and sanitation of an auxiliary hospital, its inspection must be concerned on the clinical side with two related but distinct matters. One is the weeding out of men who have completed their convalescence and are capable of again serving in the army, or, on the other hand, cannot again so serve; and the other the recognition of cases presenting conditions for the proper treatment of which an auxiliary hospital cannot provide adequate facilities. At the present time the arrangements for the inspection of auxiliary hospitals seem to be somewhat complex. If we understand aright, such a hospital may be inspected by an officer sent from the general hospital to which it is auxiliary, by the A.D.M.S. of the district, and by the D.D.M.S. of the Command or the inspector of hospitals to the Command who, it would appear, acts for him; finally, it will be visited from time to time by the consulting surgeon and physician, whose principal function it is to consult with the medical officers of the auxiliary hospital as to the further treatment of cases which are not making satisfactory progress.

The two questions which, as we have endeavoured to show, arise in this connexion both affect man

power. The first concerns the man power of the army and of the civil community, a matter to which reference has already been made, and the other the man power of the medical profession. We know what excellent work is commonly done by the medical officers of these hospitals, but it seems almost inevitable that the length of time during which men are too often allowed to remain in them must involve a waste of medical effort. Such waste is from every point of view to be deprecated at a moment when the medical attendance on the civil population is conducted under a great strain.

INDIAN CONSTITUTIONAL REFORMS.

THE report of the Secretary of State for India, Mr. E. S. Montagu, and the Viceroy, Lord Chelmsford, on Indian Constitutional Reforms,[1] is a state document which undoubtedly marks a new epoch in the relations of this country to India. The two high officials who sign it state that their "conception of the eventual future of India is a sisterhood of states, self-governing in all matters of purely local or provincial interest, in some cases corresponding to existing provinces, in others perhaps modified in area according to the character and economic interests of their people. Over this congeries of states would preside a central government, increasingly representative of and responsible to the people of all of them; dealing with matters, both internal and external, of common interest to the whole of India; acting as arbiter in inter-state relations, and representing the interests of all India on equal terms with the self-governing units of the British Empire." With regard to the Native States it is considered possible that they will wish to be associated for certain purposes with the organization of British India, in such a way as to dedicate their peculiar qualities to the common service without loss of individuality.

The principle laid down in the pronouncement of August 20th, 1917, was the progressive realization of responsible government. The report takes the province as the unit within which immediate and complete responsibility in local affairs should be established, the "responsibility within provincial governments in certain subjects being first to constituencies and then to the legislative councils"; other matters should be reserved to the executive Government, whose responsibility to Parliament would for the time being continue. Further, it is proposed to establish machinery for periodic inquiry every ten or twelve years, with a view to the progressive diminution and eventual disappearance of the reserved subjects. Such a policy must involve a change in the position of the European services in India. It is proposed to make over certain functions to popular control, and in respect of these—an increasing number—English commissioners, magistrates, doctors, and engineers will be required to carry out the policy. Simultaneously the services are to be opened more widely to Indians, and this, it is recognized, must affect the cohesion of the services. The Viceroy and the Secretary of State are agreed "that the English members of the services will continue to be as necessary as ever to India. . . . They may be diminished in numbers, but they must not fall off in quality." They do not attempt to forecast the future organization and disposition of the services which must be settled in the course of political evolution, and they sum the matter up as follows: "We are no longer seeking to govern a subject race by means of the services; we are seeking to make the Indian people self-governing. To this end we believe that the continued presence of the English officer is vital, and we intend to act on that belief. So long as Indians are employed in increasing numbers wherever they are fit, there can be no just complaint of the retention of the Englishman; if that condition is not fulfilled, there is an appeal to the periodic commission. It will henceforth be accepted as the duty of the European officers in the service of India to do all that lies in their power to fit Indians to take their places beside them."

The general conception is that the Government of India must preserve indisputable authority on matters adjudged by it to be essential in the discharge of its responsibility for peace, order, and good government. These matters are termed "reserved subjects." The next principle is that provincial governments should be given the widest independence from superior control in legislative, administrative, and financial matters, compatible with the discharge of its responsibility by the Government of India. Responsible government in the provinces is to be attained first by the devolution of responsibility in certain subjects—the "transferred subjects"—and then by the gradual increase of this devolution until complete responsibility is reached. The Government of India will still be empowered to legislate on any provincial matter in respect of which uniformity is desirable. The list of transferred subjects would vary in each province and be susceptible to modification at subsequent stages. It is suggested that a special committee should be appointed to determine what matters should be transferred and when. Its first business would be to consider what services should be appropriated to the provinces, all others remaining with the Government of India. The guiding principle would be to include in the transferred list those departments which afford most opportunity for local knowledge and social service. The report contains a list of subjects suggested as those which should at first be so transferred. Among these are the maintenance of law and order, land revenues, administration, agriculture, public works, education, and certain medical and sanitary matters, including public health, hospitals, dispensaries, leper asylums, Pasteur institutes, sanatoriums, and matters relating to medical institutions.

Medical and sanitary matters do not appear to be treated in the body of the report. We can only draw conclusions from the list of transferred subjects and the general observations on the European services. It is said that the restriction of the number of Europeans in the service and the constitutional changes taken together will make it absolutely necessary for India to secure the very best type of European officers, and the Secretary of State and the Viceroy are anxious that the present opportunity should be taken to do something towards restoring the real pay of the existing services to the level which proved attractive twenty years ago. They add that it is necessary to do something substantial to improve the conditions of service and to secure the European recruitment which they regard as essential. The scales of pay are not reviewed in detail, but the importance of remembering that whatever causes of complaint the Public Services Commission found to exist have since been aggravated by three years of war is emphasized. It is recognized further that in the case of certain services in particular the need for improving the terms is specially strong. The remedies proposed by the Commission on the Pu

[1] His Majesty's Stationery Office: to be obtained through any bookseller. 1s. 3d. net (Cd. 9109).

Services—mainly an incremental scale of pay and improvement in the calculations on which recruitment is based—are approved. Mr. Montagu, in his address to the deputation from the British Medical Association, clearly indicated that both these conditions apply to the Indian Medical Service.

THE INFLUENZAL PANDEMIC.

The influenza that we read so much about in the daily papers seems to have visited almost all the countries in Europe, civilized and barbarian alike. It appears to have been particularly widespread in Spain during the month of May; that there were eight million cases of the disease in that country, as was alleged by the French press at the time, is a statement requiring perhaps a grain of salt for deglutition, but certainly pointing to a very heavy incidence. Information reaching this country through Holland indicates that the epidemic has been very prevalent both in Germany and Austria, and it is said that the armies of the Central Powers on the Western Front have suffered severely. Many cases have occurred in the allied armies, and the French civilian population is no more exempt than our own. The disease among our own people appears to be no more severe, speaking generally, than it is reported to have been in Spain.[1] The onset is often peculiarly sudden, the victim being struck down with dizziness, weakness, and pains in various part of the body, suddenly while on duty or in the street. There is a sharp rise in temperature to 103° or 104° F., and complaint is chiefly made of headache, pain in the back, and photophobia. The throat feels a little sore, the pharynx is congested, in some cases laryngitis and signs of bronchitis appear. Curiously enough, the sign to which Major H. F. Marris, R.A.M.C.(T.), recently drew attention in trench or louse fever—namely, lateral nystagmus with suffusion of the conjunctivae—has not rarely been found in these influenza patients. In many cases the fever falls in three or four days, and the patient recovers rapidly. In others the course is longer, and the continuance of an irregular pyrexia may be accounted for by bronchitis, or, in rare instances, by capillary bronchitis, bronchopneumonia, or even the discovery of the bacillus of influenza in the circulating blood. Few cases, so far as we are informed, have proved fatal; in some such the cause of death has been acute bronchiolitis with increasing cyanosis and terminal failure of the right heart. Influenza of the gastro-intestinal type has not been common; such a diagnosis is, indeed, by many held to be questionable and suspect at any time, and particularly so at the present moment when cases of food poisoning or acute disturbances due to the unusual character of meals nowadays are not infrequently encountered. The many complications and sequelae by which in times gone by epidemic influenza made itself remembered seem to be happily rare. This circumstance has been held to show that we are not now dealing with an epidemic or a pandemic of influenza at all; but bacteriological evidence is accumulating to prove that the influenza bacillus is responsible for at least a considerable proportion of the cases. Swabs taken from the inflamed pharyngeal surface generally show a varied bacterial flora, perhaps with pneumococci and what at first sight appear to be pneumobacilli predominating, and *Micrococcus catarrhalis*, streptococci, staphylococci, and other microbes as well, but no obvious influenza bacilli. Cultures, however, are said to give grounds for the belief that these pneumobacilli are in many cases influenza bacilli of aberrant type—the organism is notoriously polymorphic—and not true pneumobacilli of Friedländer at all. It may be added, also, that the pneumococci are in many instances of the saprophytic type, and not pathogenic to guinea-pigs. In other cases the throat swab shows typical groups of influenza bacilli directly, as well as on culture. The incubation period of the disease, a thing not easily to be established in the community at large where so many victims and carriers occur, would seem to be about forty-eight hours or less; at any rate, its spread from bed to bed in hospital has been observed to take place at that rate. As for treatment, bed and the exhibition of some salt of quinine or of aspirin seem to be indicated; the use of gargles appears not to influence the course of the disease, but the free use of aspirin certainly mitigates the patient's discomfort. In the matter of prophylaxis, as in the prophylaxis of cerebro-spinal fever, free ventilation is imperative; and after that we come up against the deplorably low standard of public conduct that prevails in the matter of coughing, sneezing, and spitting without the use of a handkerchief. Without doubt the virus of influenza is transmitted from one person to another in the vehicle of droplets of nasal and bucco-pharyngeal mucus, disseminated broadcast in the unguarded spasms of coughing, sneezing, and spitting to which people with coughs and colds, whether influenzal or not, are so objectionably prone. How much better it would be for all of us, and how fatal to the spread of influenza *et hoc genus omne*, if we could all go back to our childhood, and learn once more with the thoroughness engendered by the fear of, say, an instant smacking never to cough or sneeze without first covering both mouth and nose with a handkerchief! But this is to ask too much.

[1] BRITISH MEDICAL JOURNAL, June 1st, 1918, p. 627; June 8th, 1918, p. 653.

THE MEDICAL PROFESSION AND A MINISTRY OF HEALTH.

The Royal College of Physicians of London, on January 31st, asked the president to nominate a committee to report upon the question of a Ministry of Health, and this committee was constituted on April 25th. It presented an interim report on June 3rd, when it was decided that steps should be taken for the formation with other bodies of a small joint committee on the subject with power to communicate when necessary with the Government.[1] The Council of the Royal College of Surgeons of England followed suit at its meeting on June 13th, when a committee was appointed to co-operate with the Committee of the Royal College of Physicians, and the suggestion has been made that this joint committee should co-opt representatives of the universities and of the Society of Medical Officers of Health. In the meantime the Royal Society of Medicine had begun to take an interest in this topic, and a discussion on the future of the medical profession and a Ministry of Health was spread over three evenings.[2] The practical outcome of the debate was a resolution requesting the council of the Royal Society of Medicine to appoint a small watching committee to consider the progress of the question and report to the council from time to time. Thus the English Royal Colleges and the Royal Society of Medicine have all begun to move in the same direction, following the lead of the British Medical Association, which appointed a special Ministry of Health Committee nearly eighteen months ago. This Committee went very fully into the matter and prepared an outline scheme for the establishment of a Ministry of Health, which was approved in general terms by the Representative Body last July. The original proposals have been re-examined and revised from time to time, and the amended scheme, which was forwarded to the Minister of Reconstruction on February 12th, 1918, has been printed in the Annual Report of Council, and will be submitted to the Annual Representative Meeting on July 25th. The Association has also issued an explanatory pamphlet embodying the revised scheme as approved by the Council. On March 13th Dr. Addison received the

[1] BRITISH MEDICAL JOURNAL, June 8th, 1918, p. 649.
[2] BRITISH MEDICAL JOURNAL, April 20th, p. 456; June 8th, p. 653; June 15th, p. 675.

members of the Ministry of Health Committee, and discussed with them the proposals contained in a draft bill of which he was in charge; but since the beginning of the German offensive on March 21st the state of Government business in the House of Commons has been materially altered, and from the Home Secretary's statement in the House on July 10th it seems clear that there is little prospect of the Government introducing the measure before the adjournment. In that case it must go over to the autumn session at earliest, and we trust that during this interval every effort will be made to bring at once into close relationship the Ministry of Health Committee of the British Medical Association and the various committees of other professional bodies which have now been set up to study the same problem, though apparently from somewhat diverse standpoints. It must be remembered also that the Royal Colleges in Scotland have shown their interest in the proposal for the establishment of a Ministry of Health, and have expressed their views as to the means that must be taken to render any scheme that may be evolved suitable to the special conditions of Scotland. There will be universal approval of the view expressed by Sir Bertrand Dawson in his Cavendish lecture, of which we print the first part this week, when he said that if medicine is to exercise its proper influence in public affairs the profession must close its ranks, work out a sound policy, and improve its organization for expressing its views. Dr. Biggs strikes the same note at the close of his address on clinical organization when he says "we may either lead the way of and by ourselves, or we shall assuredly be forced into a way devised for us by those who do not understand the position."

TUBERCULOSIS AT HOME AND ABROAD.

COMPLAINT is often made that, for lack of a uniform system of registration, it is impossible to gauge with any approach to accuracy the relative prevalence of the disease in different districts or the degree of success in treatment. Steps, however, are being taken in respect of the latter which may ultimately lead to trustworthy results. For several years past the authorities of the Midhurst Sanatorium[1] have endeavoured to keep a watch upon the after-careers of their discharged patients, and in a recent report issued by the Loomis Sanatorium, in the State of New York, similar efforts are described.[2] In both cases the figures are decidedly encouraging and prove that even when the disease has obtained a firm hold it is not impossible to induce arrest, if not complete cessation, of its advance. It is interesting to note that many patients from the American, no less than from the English, sanatorium have been enabled to take an effective part in the present war in France. The system of registration in force at Midhurst contains a feature which might well be imitated in other institutions. The separation of cases with bacilli in the sputum from those in which none were found yields results which enforce most emphatically the value of early recognition. To wait for the appearance of bacilli to confirm diagnosis is unjustifiable, now that the full significance of their presence is so clearly recognized. A strong plea for greater uniformity of classification was put forward by the tuberculosis officer for Middlesbrough, at a meeting of the North-Eastern Tuberculosis Officers' Association at Newcastle-on-Tyne last January.[3] Dr. Ellis advocated a strict division for statistical purposes between patients below and above the age of 15, males and females being separately reported upon. He also claimed that a uniform death-rate for tuberculosis should be adopted as for 10,000 living, as against the death-rate from other causes per 1,000 living, and these recommendations appear to have met with the general approval of the meeting. Incidentally he pointed out that the disease at the beginning of the war showed a decided increase among [illegible] in some of the northern counties, but that during the last two years the increase had been most marked in females. This he attributed to the great increase in physical effort, and possibly also of mental strain, due to the war. Housing and other local conditions were not, he thought, account for it. An interesting report reaches us from Trinidad, where, for several years past the local association at Port of Spain has been active in endeavouring to cope with the disease on the same lines as the parent association in England. The work has evidently been difficult among people of many nationalities, and most of them coloured, but it is gradually achieving the results at which it aims. The erection of a very substantial building as a dispensary, opened by the Governor last January, will doubtless enable the authorities to deal more effectively with the disease, which is very prevalent and fatal, the death-rate per 1,000 of the population being as high as 3.66.

[1] Eleventh Annual Report, King Edward VII Sanatorium, 1916–17.
[2] Twenty-first Annual Report, Loomis Sanatorium, October 31st, 1917.
[3] Presidential Address, North-Eastern Tuberculosis Officers' Association. Newcastle-on-Tyne, April, 1918.

THE ROCKEFELLER FOUNDATION.

THE Rockefeller Foundation in New York is a conspicuous example of modern philanthropic effort. Owing its existence and its maintenance to the enlightened liberality of Mr. John D. Rockefeller, it is conducted on business lines without the appeals to public benevolence which, in the absence of State endowment, are generally necessary to procure the funds required for the successful prosecution of charitable enterprises. A review of the work done by the Foundation in 1917 for various purposes connected with the war, and in regard to public health and medical education, recently issued by the president, Mr. George Vincent (New York, 1918) states that at the end of 1917 the principal fund had a market value of about £21,000,000, the income of that fund for the year was £1,430,770. To this were added a balance carried over from 1916, a gift from Mr. Rockefeller of £1,100,000, and the sum of £1,000,000 voted by the trustees from the principal fund. The total balance carried forward into the year 1918 was £23,325,000, but all except £254,267 of this amount will be needed to meet appropriations and pledges for the next fiscal year. The Foundation is at present devoting by far the greatest part of its available resources to the support of war work. When the United States joined in the great struggle the Foundation placed a large sum at the disposal of the American Red Cross, which has undertaken comprehensive schemes of relief for the allied armies and the civilian population of the invaded countries. The only work which it is now directly administering in Europe is an antituberculosis campaign in France. The American Government from the first insisted that the training camps were to be regarded as educational institutions. Official commissions and national and local societies work together in providing within and outside camps comfort, recreation, social entertainment, educational opportunities, and moral safeguards for the troops. To meet all the units that make up this vast co-operation the Foundation has given sums amounting in the aggregate to £900,000. In 1917 a portable military base hospital was erected in the grounds of the Rockefeller Institute for Medical Research, embodying the features which British and French experience has proved to be essential. In this hospital the Carrel-Dakin method of sterilizing wounds is being demonstrated. To the hospital and the laboratory medical officers of the army and navy are being sent for study and experience. The Foundation has undertaken the making of serums and their distribution to Government hospitals. Funds are being provided to help the Surgeon-General in engaging specialists for the treatment and hospital care of nervous and mental diseases due to the

[4] Twelfth Annual Report, Trinidad Association for Prevention and Treatment of Tuberculosis, 1916.

Contributions were also made for the after-care of the victims of infantile paralysis in the epidemic in New York in 1916. In 1915 the Foundation offered to bear the cost of establishing and maintaining as a part of Johns Hopkins Hospital a school of hygiene and public health. During 1917–18 a staff was recruited and lines of work laid down. Dr. William H. Welch resigned his professorship in Johns Hopkins to become director of the new institution. During 1917 steady progress was made in campaigns against hookworm, malaria, and yellow fever, in promoting better health administration, in securing reform in sanitary legislation, in persuading Governments to increase their expenditure for preventive medicine, and in encouraging public health education. In China the Foundation is promoting modern medical education and hospital administration. In September last the Chinese Minister of Education laid the corner stone of the Peking Union Medical College, which is being built in the Chinese capital. The programme also includes a medical school and hospital at Shanghai, but the war has interrupted the prosecution of this scheme. The growth of the Rockefeller Institute for Medical Research has called for increasing sums for equipment and current expenses, and $400,000 was appropriated during 1917 as an addition to its endowment.

VENEREAL DISEASE IN GERMANY.

Dr. O. Gans[1] has investigated 1,000 cases of venereal disease (740 cases of gonorrhoea, 260 of syphilis) admitted to a military hospital. Only 21.3 per cent. of the infections were traced to brothel and street prostitutes; the frequency with which the various classes of women were sources of infection was in the following order: waitresses, servant girls, street prostitutes, shop girls, brothel prostitutes, factory girls, and the soldiers' own wives; 692 of the women were unmarried, and 308 married. Only 14 per cent. of the men were infected on active service; the remainder were infected at home, or during leave or garrison duty. Gans concludes from these figures that while summary measures directed against infected women immediately behind the fighting line may be beneficial, the principal evil exists at home, where, he says, compulsory isolation of infected women is not feasible. He considers personal prophylaxis the only way out of the dilemma. The Reichstag committee appointed to report on venereal disease and allied problems has put forward the following legislative proposals: (1) The doctors' right to professional secrecy in connexion with patients suffering from venereal disease to be suspended in the interests of the State. In other words, there should be specific "nominative" notification of venereal disease to the authorities. (2) Penalties for communication of venereal disease. (3) Organization of the insurance societies and sick clubs in a campaign against venereal disease. It is proposed that the insurance societies alone shall bear the cost of the establishment of the venereal disease dispensaries, and the cost of treatment is to be borne both by insurance societies and sick clubs. Permanent control and supervision of the syphilitic is to be established. (4) Venereal disease and diseases of the skin to be subjects for special examination in the medical curriculum. (5) Treatment of the subjects of venereal disease to be confined to qualified medical practitioners. (6) Canvassing by doctors by advertisement for patients suffering from venereal disease to be prohibited. According to Dr. A. L. Gross,[2] opposition to the first proposal (abolition of professional secrecy) has already gone far towards its radical alteration or even total annulment. Dreuw,[3] who has discussed all these proposals, criticizes the scheme for establishing innumerable local authorities to deal with notifications; he prefers a single central authority, in whose hands notifications by name would be comparatively safe from personal indiscretions. But it does not appear that his scheme has been endorsed by the Reichstag committee. In a short note in the *Deutsche medizinische Wochenschrift* for January 17th, 1918, it was stated that the proposals affecting venereal disease have already been embodied in a bill, with provision for three years' imprisonment or less for communicating venereal disease. Advertisements of remedies in the lay press are forbidden, and penalties are fixed for infected nurses who suckle other children than their own. Compulsory examination and treatment of women is also to be put on a more uniform and legal footing than has hitherto been the case.

[1] *Deut. med. Woch.*, January 3rd, 1918.
[2] *Ugeskrift for Laeger*, No. 37, 1917.
[3] *Dermat. Woch.*, Nos. 11 and 12, 1917.

BOTULISM FROM CANNED VEGETABLES.

Botulism has assumed considerable importance in the United States since the great increase in home canning of fruit and vegetables which has resulted from the food preservation programme. This subject has been discussed in a series of papers recently sent us by Dr. Ernest C. Dickson of San Francisco, now a captain in the Canadian Army Medical Corps. In an experimental study[1] published in 1915 he shows that the presence of animal protein is not essential for the development of the toxin of botulism, but that the toxin may be produced from a medium made from string bean or from peas. In a subsequent paper[2] he states that during the past twenty years there have been at least 22 known outbreaks of botulism in the United States, in which 81 persons were attacked and 55 died, a mortality of 67.9 per cent.; 18 of the outbreaks occurred on the Pacific coast (17 in California and one in Oregon). In only 7 of the 18 outbreaks in which the source was discovered was the poisoning due to food of animal origin. In all the rest it was of vegetable origin, such as home-canned pears, apricots, corn, asparagus, beans, and spinach. The attacks of botulism due to this cause were not confined to human subjects. Dr. Dickson relates[3] several outbreaks in California of fatal paralysis occurring in chickens after eating canned corn and beans. From their crops and gizzards an organism was recovered which was morphologically and culturally identical with *B. botulinus*, and produced a toxin by which the typical symptoms and characteristic thrombosis could be reproduced in animals. It is significant that in all the outbreaks in which botulism has developed after eating canned fruits and vegetables the materials had been canned at home. There can be no doubt, says Dr. Dickson, that the methods of sterilization commonly employed by the housewife are entirely inadequate, if the food is contaminated by spore-bearing bacteria. As the botulinus toxin is easily destroyed by heating, all danger of botulism will be removed from the home-canned products if the food is always boiled before it is eaten.

[1] *Journ. Amer. Med. Assoc.*, 1915, lxv, pp. 492–496.
[2] Ibid., 1917, lxix, pp. 966–968.
[3] *Journ. Amer. Veterin. Assoc.*, January, 1917; *Proc. Soc. Exp. Biol. and Med.*, 1916, xiv, pp. 47–48.

ANTITYPHOID LIPOVACCINE.

The lipovaccine T.A.B. brought in by Le Moignic of the French navy, referred to in our issue of February 23rd last (p. 240), has now been favourably reported on by the committee on therapeutic serums appointed by the Academy of Medicine and presided over by Netter.[4] The special feature of this vaccine is, as its name implies, its oily basis, which ensures slow absorption of the immunizing bodies contained in the typhoid and paratyphoid bacilli, and so renders it unnecessary to give more than one injection to obtain complete protection. As a result the frequency and importance of the local and general reactions are diminished, and the number of persons, sometimes amounting to 30 per cent., who have to be excused inoculation on account of the effect of reactions —namely, malarial subjects, convalescents, and those

[4] A. Netter: *Bull. Acad. de méd.*, Paris, 1918, 3e sér., lxxix, 387–390.

disposed to tuberculosis—is much reduced. A cubic centimetre of lipovaccine T.A.B. contains a minimum of 2,600 million of dead typhoid bacilli and 2,275 million each of dead paratyphoid A and B bacilli, and ampoules containing 2, 5, and 10 c.cm. are made up. In France, Algeria, and Greece, more than 150,000 people have now been inoculated, and in exceptional instances only has a local abscess followed; fever, rarely lasting more than forty-eight hours, occurred in about 4 per cent., lumbar pain and vomiting were even rarer, and fainting was never noted. From the relatively short time during which this vaccine has been employed, statistics are scanty, but all medical men agree that persons so vaccinated are remarkably immune to enteric even in regions where the disease is highly epidemic, such as Algeria. In Toulouse, among those inoculated in 1916, there was one case among 1,172 vaccinated persons from the eighth to the sixteenth month after inoculation, as compared with one case in 287 among unvaccinated subjects.

Medical Notes in Parliament.

Military Service: Medical Grading.

NEW DEFINITIONS FOR THE OLDER MEN.

IN reply to Sir Donald Maclean, on July 8th, Sir Auckland Geddes said that conferences had been held, with the President of the Local Government Board in the chair, between the Minister of National Service, Chairmen of Tribunals, and other members of Parliament, with the following result:

In future men of the new military age passed by medical boards as fit for Grade I will be classified as Grade I (B 1). Similarly, men of these ages passed as fit for Grade II will be classified Grade II (B 2), and those passed as fit for Grade III will be classified as Grade III (B 3). Instructions will be immediately issued by the Local Government Board to tribunals that, in considering the relative military value of Grade I (B 1), they must assume these men are "not fit to be trained for first line infantry," and that in considering the relative military value of men in the new classifications Grade II (B 2) and Grade III (B 3), they must assume that they are of substantially less military value than men under the previous Military Service Acts who were placed in Grade II or Grade III respectively. Instructions will be given to each National Service representative that if and when requested by a tribunal he shall state whether a man placed in Grade III has been found by the medical board to be fit only for sedentary work.

It was agreed also that greater publicity should be given to the opportunity of every man to apply for a second examination by a National Service medical board if he were dissatisfied with his first examination.

On questions as to the positions of the older men already passed in Grade I and Grade II, Sir Auckland Geddes said that any case that was put forward would be favourably considered where it could be shown that any misunderstanding had existed in the minds of tribunals. Mr. Albion Richardson asked whether it was not the fact that a man was entitled as a matter of right to claim a rehearing of his case on the ground that a new and material fact had arisen since the case was last heard—namely, a change in the grading. Sir Auckland replied that a man had a right to apply but the tribunal might refuse the application.

In answer to Sir Charles Henry, Mr. Beck stated that of the men medically examined up to June 29th who were above the former military age, the percentage passed as Grade I and Grade II was about 12 per cent. less than anticipated. But it had to be pointed out that these percentages were based on a review at present necessarily incomplete, and therefore they were liable to be misleading.

The Education Bill.

MEDICAL INSPECTION AND TREATMENT.

When the Education Bill is taken in the House of Commons on Report, two important considerations as to medical inspection and treatment will be further discussed. In Committee, on July 1st, Mr. Herbert Fisher (the Minister of Education) accepted an amendment to qualify Clause 18, which affects children and young persons attending secondary schools, continuation and other schools, and other "educational institutions" (not being elementary schools) which might come within the scope of the Board of Education. The clause sanctioned the provision of medical inspection and treatment. Sir Watson Cheyne was of the opinion that treatment should be left out, but by way of compromise an additional subsection was accepted as follows:

Provided that the local education authority shall not establish a general domiciliary service of treatment by medical practitioners for children and young persons to whom this section applies, and in making arrangements for their treatment, the local education authority shall consider how far they can avail themselves of the services of private medical practitioners.

The grounds for such limitation are the overlapping of attention by medical officers of various authorities, and especially the fact that young persons between 16 and 18 who will eventually come under the Act for compulsory attendance at continuation schools will have the benefit of the insurance service. Sir Watson pointed out that there was nothing about medical attendance in the Scottish Bill and no one had grumbled about its absence. In the course of the debate Mr. Fisher said that the local education authority would be compelled to provide for inspection, ailments discovered would be notified to the parents. By the amendment the local education authority would be empowered to provide treatment, but debarred from establishing a service of municipal doctors to take the treatment out of the hands of private practitioners. Mr. Fisher regarded the arrangement as temporary, for in the event of a Ministry of Health being set up it would in time take over the school medical services. The Board of Education was conscious of the dangers of overlapping and would confer with the Insurance Commissioners before sanctioning any arrangement to give medical attendance to young persons. It is probable that some further statement on this subject will be made on report.

The other question raised—on July 3rd—was as to the extent of medical services for elementary school children. Mr. Rowntree suggested a new clause to make it the duty of the local education authority to provide not only for the medical inspection but also for the medical treatment of children attending elementary schools. Mr. Fisher resisted the amendment on the ground that if the local authority were to take up this matter it would be necessary to make limitations and definitions which there was not time to work out at the present juncture, but eventually promised to review the subject and see whether on the Report stage he could bring forward some proposals which would be watertight and administrative if possible.

On July 8th Mr. Fisher said that in 1916–17 the total expenditure of 279 out of 318 local education authorities upon medical inspection and treatment of children in public elementary schools was about £420,000. This amount might be exceeded after the war. Mr. Rowntree's amendment, he pointed out in reply to another question, would affect only thirty-nine authorities.

Ministry of Health Bill.

Replying to a question by Major Astor, on July 10th Sir George Cave stated that the proposal for a Ministry of Health Bill had been referred by the War Cabinet to the newly constituted Ministerial Committee on Home Affairs and was considered by them at their first meeting on July 9th. After discussion it became clear that the proposal raised questions of some difficulty, and it was decided to adjourn the consideration of the bill to a special meeting of the committee to be held early in the coming week. In the circumstances it would be impossible to pass such a bill before the adjournment of the House in August. Major Astor, regarding the answer as unsatisfactory, asked leave to move the adjournment of the House to raise a debate. The Speaker pointed out that there was on the notice paper a blocking-motion (put down by Mr. Handel Booth), and thereupon Mr. J. H. Thomas asked the Speaker whether he would exercise his discretion to override such motion and permit the debate sought by Major Astor. The Speaker said that under standing orders his discretion should be guided by the consideration whether there was prospect that a matter would be debated within a reasonable time. In view of the Home Secretary's statement he held there was such a probability, but when the decision of the Ministerial Committee was reached he would reconsider the appeal. Mr. Booth has intimated that as soon as the Maternity Bill is through Parliament he will in any case withdraw his motion.

Maternity and Child Welfare Bill.—This measure was passed through Committee in the Commons on July 9th. Some amendments may be made during the Report stage.

Enemy Attacks on Hospital Ships.—In answer to Sir Frederick Hall, Dr. Macnamara said that the right was conferred on belligerents by the Hague Convention to stop and search hospital ships to see that they were complying with the terms of the international agreement, and this right had, on several occasions, been exercised by German submarines. In no case had this country ever broken the letter or spirit of the Hague Convention regarding hospital ships, and the same statement was believed to be true as regards our Allies.

THE WAR.

THE ROYAL NAVAL HOSPITAL, HASLAR.

HASLAR HOSPITAL, though very well known to all naval surgeons, is little more than a name to most members of the medical profession. Through the courtesy of Surgeon-General G. Welch, C.B., R.N., we have lately been able to visit Haslar and see something of its work at the close of the fourth year of war. The hospital site covers an area of 57 acres on the projecting strip of sea-coast between Portsmouth Harbour and Stokes Bay. The main quadrangle, open towards Spithead, is formed by the original buildings which were begun in 1745. Many other structures have been added from time to time, and the old buildings have been modernized throughout. The normal war accommodation consists of beds for 152 officers and 1,284 men, and there was equipment for an emergency expansion of 240 more beds, giving a total of 1,676. The patients are drawn from every branch of the navy, marines, auxiliary naval services, and dockyard personnel, and include incidental casualties from allied warships.

There is a separate officers' block for medical and surgical patients, with its own operating theatre. Mental and neurological cases are accommodated in a special building within the grounds, but neurasthenic patients are not segregated as a rule. The section for zymotic diseases and cerebro-spinal meningitis is built on the pavilion system, and stands in an isolation compound close beside the sea; it is entirely self-contained, and is administered under the Surgeon-General by a staff surgeon, whose office and sleeping quarters are on the spot. Cerebro-spinal fever patients are now usually given a semi-intensive treatment with Flexner's 1918 serum; four intrathecal injections of 20 c.cm. being given on four consecutive days.

The venereal disease section occupies a wing of the old buildings, and has its own theatre. All permanent medical officers of the navy take a course of instruction in this department. Lectures on the dangers of venereal disease and the importance of early treatment are given to the men by medical officers in all ships and naval establishments, while a peripatetic fleet surgeon lectures to the crews of trawlers and other smaller craft. The results in the way of early diagnosis and early treatment have already been most encouraging. For clinical purposes four categories of syphilitic cases are recognized: "A" cases are the earliest, in which spirochaetes are found in the primary lesion, but the Wassermann test is negative; "B" cases are early, but with positive Wassermann; "C" cases are those with syphilides and secondary lesions; "D" cases are those, with or without lesions, in which infection took place more than eighteen months before. The cases are fully recorded on a card-index system, and a "follow up" organization has been devised which permits continuous control from the centre of all patients for two years after the blood becomes negative. The usual treatment for acute early cases of syphilis is six doses at three-day intervals of 0.4 gram of neo-kharsivan or novarsenobillon; the "neo" compounds are alone used, and mercury is not given at all. Some 10,000 Wassermann tests are performed every year by the staff of the pathological department. The laboratory was formerly used as an instruction centre, but this work was transferred to the Royal Naval Medical College when that was opened at Greenwich in 1912, and the Haslar pathological laboratory is now only used for routine clinical investigations and analysis of food and water.

Since the war Haslar Hospital has been presented with the equipment for a large and up-to-date massage and exercise room, adjoining the *x*-ray and electro-therapeutic departments. In recent years one of the older wards on the ground floor has been reconstructed for the reception of cases of pulmonary tuberculosis; it opens on to a section of the grounds equipped with sheds for the open-air treatment of tuberculous patients waiting to be invalided out of the service.

The electric power laundry and disinfecting plant are housed in a special building. There are three Manlove-Alliott steam disinfectors—one in this building for general hospital purposes, one in the isolation compound, and one for the sole use of the operating theatres. The dispensary is equipped with power-driven tablet-making machines and mechanical mixers, together with a refrigerating plant. Among the newer detached buildings are the sisters' quarters and the officers' mess; the most recent are the almost palatial sick-berth staff quarters. The large and pleasant grounds of the hospital, stretching towards the sea, are an important factor in the recovery of patients, and there are ample means for recreation and amusement.

In a brief visit it is scarcely possible to take more than a bird's-eye view of so large an institution with its many specialized departments, but the spirit of modern medicine is apparent in every part of the smoothly-running machine.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Died on Service.

SURGEON E. J. G. SARGENT, R.N.

Surgeon Edward John Godwyck Sargent, R.N., was reported as having died on service, in the casualty list published on July 1st. He was educated at St. Bartholomew's Hospital and obtained the diploma of L.M.S.S.A. in 1917, and afterwards took a temporary commission in the navy as surgeon.

ARMY.

Killed in Action.

CAPTAIN E. NEWTON, R.A.M.C.

Captain Edward Newton, R.A.M.C., previously returned as missing, was reported as killed, in the casualty list published on July 2nd. He was educated at Cambridge and at St. George's Hospital, and took the M.R.C.S. and L.R.C.P.Lond. in 1916, after which he joined the R.A.M.C. Special Reserve as lieutenant, and was promoted to captain after a year's service.

Died on Service.

CAPTAIN J. ANDERSON, R.A.M.C.

Captain J. Anderson, R.A.M.C., was reported as having died on service, in the casualty list of July 9th.

CAPTAIN G. R. ELLIS, R.A.M.C.(T.F.).

Captain George Reginald Ellis, R.A.M.C.(T.F.), died recently at Chedworth, Gloucestershire, of illness contracted on active service. He was educated at Sherborne School, where he was in the Rugby fifteen, and at Durham University, where he graduated M.B. and B.S. in 1907, after which he succeeded his father in practice at Bishop Auckland, Durham, where he was honorary surgeon to the Lady Eden Hospital. He held a commission in the 2nd Northumbrian (Darlington) Field Ambulance, in which he attained the rank of captain on December 3rd 1912.

CAPTAIN R. N. WALLACE, R.A.M.C.(T.F.).

Captain Robert Neilson Wallace, R.A.M.C.(T.F.), died of pneumonia following influenza in the Military Hospital, Colchester, on July 5th. He was the only son of the late Dr. Robert Wallace of Manchester, and was educated at Edinburgh University, where he graduated M.B. and Ch.B. in 1907. After filling the posts of clinical assistant in the ear, nose, and throat departments of the Edinburgh Royal Infirmary, of house-surgeon of the Bradford Royal Infirmary, and of senior medical officer of the Manchester Children's Hospital at Pendlebury, he went into practice at Edinburgh. He held a commission as medical officer in the 6th Territorial Battalion of the Royal Scots, in which he attained the rank of captain on March 19th, 1910.

Lost at Sea.

The *Times* of July 9th publishes a list of medical personnel on board the Canadian hospital ship, *Llandovery Castle*, which was torpedoed and sunk by a German submarine on the night of June 27th, when carrying seven officers, fourteen nurses, and sixty-three rank and file of the Canadian A.M.C. One boat was picked up with twenty-four survivors, among whom was Major Lyon, Canadian A.M.C. A subsequent telegram stated that Captain G. L. Sills had been picked up by a west-bound ship and landed at an American port. In addition to these two the following medical officers were on board: Lieut.-Colonel T. H. Macdonald, Major G. M. Davis, Captains W. J. Enright, W. A. Hutton, and A. V. Leonard.

Wounded.

Major G. G. Timpson, R.A.M.C.(T.F.).
Captain W. M. Cameron, R.A.M.C. (temporary).
Captain E. S. Cuthbert, R.A.M.C. (temporary).
Captain W. F. Shanks, R.A.M.C. (temporary).

Prisoners of War.

Captain A. G. Clark, M.C., R.A.M.C. (temporary).
Captain R. M. Coalbank, R.A.M.C. (temporary).
Captain P. H. Green, R.A.M.C.(T.F.).
Captain G. L. Jones, R.A.M.C. (temporary).
Captain H. S. Moore, R.A.M.C. (temporary).

Formerly reported Missing, now reported Not Missing.

Captain J. P. MacVey, R.A.M.C. (temporary).

DEATHS OF SONS OF MEDICAL MEN.

Clarke, Claude Fitzroy, Major Indian Cavalry, only son of the late Dr. James Ferrier Clarke, died, from illness contracted on active service, on June 30th, aged 35. He was born on February 8th, 1883, educated at Epsom College, served in the Imperial Yeomanry from February 7th, 1902, to January 27th, 1903, got a commission in the East Surrey Regiment on July 4th, 1903, was transferred to the Indian army on July 2nd, 1907, became captain on November 18th, 1911, and had been promoted to major during the war. Before the war began he was a squadron officer in the 20th Deccan Horse. He served in the first battle of Ypres, was invalided in March, 1917, rejoined early in 1917, and was again invalided last February.

Rennie, Edward Clement, Lieutenant Royal Garrison Artillery, son of Dr. George E. Rennie of Sydney, New South Wales, died of wounds on June 14th. He was attached to the Royal Air Force.

[*We shall be indebted to relatives of those who are killed in action or die in the war for information which will enable us to make these notes as complete and accurate as possible.*]

HONOURS.

A SPECIAL Supplement to the *London Gazette*, dated July 5th, gives the following statements of acts of "conspicuous gallantry and devotion to duty" for which the distinctions announced in our issue of February 9th, p. 187, were awarded:

Bar to the Distinguished Service Order.

Major (temporary Lieut.-Colonel) Arthur Carr Osburn, D.S.O., R.A.M.C.

On seeing the enemy approaching close to his dressing station, he carried out the evacuation of the wounded under heavy shell and rifle fire in the coolest and most gallant manner. Having cleared away all cases by ambulance train and cars, he re-established his dressing station further in rear. As officer commanding bearer divisions, he constantly inspected his line of bearer posts and forward dressing stations under heavy fire. The successful evacuation of the wounded from the divisional front was due to his careful organization and fearless supervision under the most trying conditions. He was an example of gallantry, courage, and resource worthy of the highest praise.

Distinguished Service Order.

Temporary Captain Ferguson Fitton Carr-Harris, R.A.M.C.

Hearing that ten men of another battalion were lying wounded in front of the position, he volunteered on completion of the relief to go to their rescue. He was out for eight hours of the night, found nine of the men alive, took two of them back to head quarters, and organized the rescue of the remainder. He showed great coolness and self-sacrifice.

Major (temporary Lieut.-Colonel) Charles Algernon Stidston, R.A.M.C.(T.F.).

His dressing station was very heavily shelled throughout a whole day, and received several direct hits. It was impossible to remove the wounded, and throughout the day he moved about continuously, arranging for their safety with utter disregard of danger. It was owing to his fearless example and splendid organization that all the wounded were finally removed without further casualties.

Bar to the Military Cross.

Captain Cuthbert Delaval Shafto Agassiz, M.C., R.A.M.C.

When in charge of a bearer post he remained working throughout an intense bombardment, in which some of his bearers were killed and wounded while loading ambulance cars. He was compelled to remove to dug-outs, and there persisted in his work until shelled out. Though driven back three times by machine-gun fire and gas-shell barrages, he succeeded in reaching the aid posts with his bearers, and removed all the wounded.

Temporary Captain Arthur Joseph Blake, M.C., R.A.M.C.

He did splendid work in collecting and evacuating the wounded, working throughout in the open regardless of the heavy hostile fire. Later, he did excellent work tending the wounded of several units, going out after dusk to bring in wounded men from in front of our line. During the withdrawal he took out a party and carried back seven stretcher cases for a distance of three miles, thereby preventing these men from falling into enemy hands. He has at all times carried out his duties with fearlessness and courage.

Captain Eric Alfred Charles Fazan, M.C., R.A.M.C.

During very heavy fighting his aid post twice passed into the hands of the enemy. Although all communication with him by day was cut off for two days, he remained with his wounded, 235 of whom passed through his hands. It was due to his determination that every wounded man and all the personnel of his aid post were safely removed.

Captain Samuel McCausland, M.C., R.A.M.C.

He was in charge of bearers evacuating the wounded at a vill... under heavy shell and machine-gun fire. When almost the w... village was in the hands of the enemy he continued to super... the collection of wounded, and it was mainly due to him and ... bearers that they were all so speedily removed. In an attack ... performed splendid work by clearing wounded of his brigade ... most difficult conditions.

Temporary Captain James Wallace Macfarlane, M.C., R.A.M...

During a heavy bombardment of a battery position he assis... another officer and a sergeant in putting out the flames in a gun-... which had caught fire. By his prompt assistance the gun was ... from serious damage and the ammunition from destruction.

Captain Joseph Stephen Wallace, M.C., R.A.M.C.

Whilst in charge of an advanced dressing station and ... squads, he frequently visited the regimental aid posts in the ... and skilfully arranged his bearer squads to the best advantage. ... also personally conducted ambulance cars to very advanced po... tions, thus being able to get a very large number of cases remove... safety in a short time. His coolness and courage during the wh... period were a splendid example to his men.

Military Cross.

Captain Robert Vacy Clifford Ash, R.A.M.C.

When the enemy attacked and almost surrounded his dress... station, he remained at his post under intense machine-gun a... shell fire, attending to the wounded with complete disregard ... danger. He got all the wounded safely away, and was instrumen... in saving the transport and a large part of the personnel of the ... ambulance. He then volunteered to return at once to the firing l... where he did excellent work in a most exposed position. He s... magnificent example of courage and devotion to duty.

Captain Arthur Joseph Beveridge, R.A.M.C.(S.R.).

His dressing station was heavily shelled during an engagement ... but owing to his determination, courage, and initiative, a l... number of wounded were attended to and evacuated from t... danger zone.

Captain John Holliday Blackburn, R.A.M.C.

When eighty stretcher cases as well as a number of walking ca... were handed over by another division, and owing to heavy shell... it was impossible to move them during the day, he took forward ... ambulance as close up to the position as possible and organised ... evacuation of the wounded. He showed splendid determination a... resource.

Captain Rex Carrington Brewster, N.Z.M.C.

During an action he was continually exposed throughout the ... to heavy shell fire while attending to the wounded, and set ... splendid example to all ranks by his devotion to duty and contem... of danger.

Temporary Captain Joseph Victor Cope, R.A.M.C.

He was in charge of stretcher-bearers in an exposed positi... which was subjected to intense fire. Though he was suffering fr... gas he remained at his post for two days, setting such a magnifi... example to his men that the evacuation of the wounded went ... throughout the bombardment. By his courage and devotion to d... he saved many lives.

Temporary Captain David McMurray Dickson, R.A.M.C.

He tended the wounded under heavy shell and machine-gun fi... and was continuously out during the day searching the battlefi... for wounded. He showed courage of a high order on this a... many other occasions.

Captain Edgar Douglas, C.A.M.C.

He directed his relay of bearers under heavy shell fire, and, thou... wounded, remained at duty until he was relieved.

Lieutenant S. Dutt, I.M.S.

He worked indefatigably, and attended a large number of wound... belonging to various units at the aid post, which was under he... shell, machine-gun, and rifle fire. His absolute coolness and stea... devotion to duty were a splendid example to all.

Captain (temporary Major) John Douglas Fiddes, R.A.M.C.

He continued to dress the wounded under heavy shell fire at t... advanced dressing station. Although the dressing station received ... direct hit, he continued to work, and saved many lives by h... courage and untiring energy.

Captain John Henry Pearson Fraser, R.A.M.C.

He organized a new line of evacuation when the original line w... blocked by the initial success of an enemy counter-attack. Ma... wounded had collected, but he got away over one hundred stretch... cases, working unceasingly in the open for thirty-six hours.

Captain Philip Jacob Gaffikin, R.A.M.C.(S.R.).

While in charge of stretcher-bearers during an engagement h... directed the removal of the wounded under heavy shell fire, an... showed great courage and resource.

Temporary Captain Hugh Bernard German, R.A.M.C.

When his dressing station was heavily shelled he organized th... removal of thirty-eight stretcher cases. He also rescued ... wounded of another division under heavy shell fire. He establish... dressing stations without delay at various stages in an advance ... four or five miles, and so enabled the wounded to be rapi... evacuated.

Temporary Captain Frank Arthur Grange, R.A.M.C.

He worked night and day without any rest, attending to wound... from all units under continuous shell fire. He also went up to t... front line under heavy fire to attend to a severely wounded man, a... succeeded in getting him away.

Temporary Captain Edwin Allan Thomas Green, R.A.M.C.

He worked with ceaseless energy, attending and evacuating ... wounded. He moved his aid post forward, and worked under hea... shell fire till the enemy were within a few yards of his aid post. ... evacuated all the wounded, save a few bad cases who could not ... moved. His courage and presence of mind saved a large number ... wounded from falling into enemy hands.

Temporary Lieutenant Arthur Collis Hallowes, R.A.M.C.

When in charge of bearers he succeeded in rapidly evacuating ... the wounded under very difficult conditions. He attended to ... severely wounded officer under machine-gun fire

Captain Austin Dwight Irvine, C.A.M.C.

During four days in the front line he worked day and night attending to the wounded, often under heavy shelling. When casualties occurred during an enemy barrage, without hesitation he left battalion head quarters and went to the assistance of the wounded.

Captain Gordon Leigh Jepson, C.A.M.C.

He established an aid post during an attack under heavy shell fire, and for over ten hours attended to the wounded in the open under enemy shelling. When the enemy shelled his position with gas shells and a number of stretcher cases were lying outside the aid post, he went out at great personal risk and put box respirators on all the wounded, and by his prompt action saved many lives. He showed the greatest courage and self-sacrifice.

Temporary Captain James Phillips Jones, R.A.M.C.

He worked in the line for a fortnight organizing advanced dressing stations and bearer systems. During an enemy attack he was cut off from battalion head quarters, but established an aid post and worked under heavy fire in the open for thirty-six hours attending to a large number of wounded. He showed the greatest courage and endurance throughout.

Temporary Captain Frederick Bennett Julian, R.A.M.C.

He remained at his post attending to the wounded during an engagement with great courage and determination, though suffering severely from the effects of gas.

Temporary Captain Duncan John McAfee, R.A.M.C.

When two attempts to remove a wounded man from a regimental aid post had failed owing to the stretcher-bearers being killed, he at once led forward a third party and succeeded in getting all the wounded back to a place of safety under very heavy shell fire. He showed splendid courage and self-sacrifice.

Temporary Captain Frederick Buick McCarter, R.A.M.C.

When after an attack there were heavy casualties, he continued to attend the wounded in an open road enfiladed by machine-gun fire, and undoubtedly saved many lives.

(To be continued.)

COMMENDED FOR SERVICES.

The following are among the officers brought to the notice of the Secretary of State for War for valuable services rendered in connexion with the war: Captain (temporary honorary Lieut.-Colonel) D. J. Armour, R.A.M.C.(S.R.). Honorary Lieut.-Colonel G. W. Badgerow, C.A.M.C. Colonel W. H. Horrocks, C.B., A.M.S. (R.P.). Lieut.-Colonel F. S. Irvine, D.S.O., R.A.M.C. Major C. Macpherson, M.D., Royal Newfoundland Regiment. Colonel A. Primrose, C.A.M.C. Temporary Colonel Sir Ronald Ross, K.C.B., F.R.S., A.M.S. Colonel (temporary Major-General) G. B. Stanistreet, C.M.G., A.M.S. Lieut.-Colonel C. H. Tewsley, N.Z.M.C. Temporary Colonel A. S. Woodwark, A.M.S.

FEES TO CIVILIAN MEDICAL PRACTITIONERS.

AN Army Council Instruction, No. 683 of 1918, dated June 16th, 1918, states that owing to the increased cost of travelling, etc., the scale of fees for civilian medical practitioners laid down on the reverse of Army Form O. 1667, is cancelled, with effect from July 1st, 1918, and the following scale is substituted therefor:

Visit and Medicine.

	Under one mile.	Over one, but under two miles.	Over two, but under three miles.	Over three, but under four miles.	Over four, but under five miles.	Greater Distances.
	s. d.	s. d.	s. d.	s. d.	s. d.	
Day	2 6	3 6	4 6	5 9	7 0	An addition of 1s. 3d. for each mile over five up to a limit of £1 a visit.
Night (10 p.m. to 7 a.m.)	3 6	5 0	7 0	9 6	12 0	An addition of 2s. 6d. for each mile over five up to a limit of £1 a visit.

NOTES.

THE ORDERLY DOG.

CAPTAIN G. D. MACKINTOSH, R.A.M.C., has designed a medical pannier for his great Dane, which may prove useful. The following is his description:

It consists of a khaki cloth jacket and pockets lined with oil silk or jaconet, on which are marked the names of contents; the latter are alterable according to immediate requirements. There are pockets for brandy, stimulating draught, anodyne draught, water bottle, small thermos flask with hot tea or milk, six or seven field dressings, field tourniquet, and "tabloid splints." One pocket contains cigarettes and matches. Each pocket is labelled with a plainly printed tape.

The pockets are spread over the jacket so as not to inconvenience the dog's movements.

Captain Mackintosh's reasons for choosing a great Dane are the dog's colour, inconspicuousness, and great strength and activity; although his size is in some ways a disadvantage, yet it might enable him to get through the enemy where a smaller and more timid animal would fail.

Correspondence.

THE VALUE OF TUBERCULIN IN PULMONARY TUBERCULOSIS.

SIR,—Like Dr. Lindsay, I have long "protested against the *abuse* of tuberculin in the treatment of tuberculosis of the lungs," though perhaps Dr. Lindsay is protesting against its use. That tuberculin is an invaluable remedy I have no doubt. This is no mere *ipse dixi* but a fact proved by those who have had the courage to use it in large doses according to well-tried methods. Dr. Lindsay may choose to ignore the wealth of evidence furnished in my book *Tuberculin in the Diagnosis and Treatment of Tuberculosis*, but he cannot afford to ignore the evidence provided also by Turban of Davos, by Rumbold, by Bandelier and Roepke, by Wolman and Amman, by Pottenger of America, by Denys of Louvain, by Mitulescu of Bucharest, and more recently by Moeller of Belzig. As Dr. Lindsay "has seen no evidence to suggest that the results are better in the sanatoriums employing tuberculin than in those which dispense with it," I venture to give Moeller's statistics.

Moeller's Earlier Statistics.

Sanatorium methods alone arrested ... 10.9 per cent.
Sanatorium methods + tuberculin arrested 36.3 "

Arranged according to stage of disease—

Stage I:
Sanatorium methods alone arrested ... 31.8 per cent.
Sanatorium methods + tuberculin arrested 75.0 "

Stage II:
Sanatorium methods alone arrested ... 1.9 per cent.
Sanatorium methods + tuberculin arrested 20.0 "

Stage III: Actual arrest mere curiosities.

According to later experiences, when Moeller had virtually abandoned sanatorium methods,

Sanatorium methods alone may arrest 25.30 per cent. of cases of pulmonary tuberculosis in the first stage; tuberculin arrested the disease in 84 per cent.

In the second stage the figures are: Sanatorium methods, 0; tuberculin, 40 to 60 per cent.

It is surprising that Dr. Lindsay should confess his ignorance of the results obtained by men like Turban, Bandelier, Moeller, Petruschky, and myself, who have based our views on solid work. We have made observations—each of us—in over 500 cases. I have a right to ask whether Dr. Lindsay and those who agree with him have used our methods in even 100 cases. "By their fruits ye shall know them." Has Dr. Lindsay ever read *Studies in Pulmonary Tuberculosis*, by my old pupil, Dr. Guy Griffiths? Tuberculin as a remedy can only be tested in the crucible of experience, and the test must be continued for five years, in accordance with the general rules worked out by those who have won success. I have taught hundreds of medical men in my day, and I do not know of any pupil who recanted after having watched our methods for at least six months.

The value of the various preparations of tuberculin is a subsidiary question. A month spent at our tuberculin dispensary in London would enlighten Dr. Lindsay even on this matter. Most tuberculins are valuable, but not all tuberculins are properly standardized, and, alas! some of the best preparations are not to be had for love or money.

On the other hand, sanatoriums can never reach 10 per cent. of the sufferers, and, in doing so, often violate the canons of economics, finance, sociology, and even of medical science.—I am, etc.,

W. CAMAC WILKINSON, M.D., F.R.C.P.,
Late Lecturer on Pathology and Medicine, Sydney University.

London, W., July 6th.

SIR,—Professor Lindsay asks for an expression of opinion on this subject from those best qualified to speak.

Who those best qualified to speak may be is a delicate question, but I consider that tuberculosis medical officers who have given serious attention to the matter should be among the number. As one of these I have endeavoured to answer the questions raised by Professor Lindsay in a little book published this year and reviewed in your issue of May 11th, 1918. Since its publication the completed statistics of another year strongly confirm the opinion expressed in the book in favour of the use of tuberculin in

all afebrile cases of pulmonary tuberculosis, provided a rational system of dosage and intervals between doses be followed. Haphazard and rule-of-thumb administration of tuberculin is likely to do more harm than good.—I am, etc.,

Knock, Belfast, July 8th. JOHN R. GILLESPIE.

SIR,—The letter of Dr. Lindsay seems very opportune, and I should like to make the following remarks:

1. It should be remembered that compared with its incidence tuberculosis is as a rule a non-fatal disease; and no judgement can be passed on the usefulness or otherwise of tuberculin if it be given to all and sundry indiscriminately.

2. Tuberculin should only be given to suitable cases; this applies to any remedy.

3. It has only a comparatively limited sphere for good; if given carelessly, it is often very dangerous.

4. About the only certain thing known as to tuberculin is that it has the power of causing inflammation in a certain number of lesions due to tuberculosis; this probably explains why all kinds of tuberculin are sometimes useful, and also why all kinds of tuberculin are sometimes dangerous.

5. Tuberculin is least dangerous in cases that have been allowed to become chronic, those which are insensitive or protected from harm by fibrosis. In some of these it does good; in a large number no benefit or detriment can be ascertained; in others it does harm, often very insidiously.

6. In non-autotoxic tuberculosis it may be useful, but only when there is no danger of breaking down deeply-seated tuberculous foci, such as occur in joints. Tuberculins derived from human bacilli are often useful in treating phlyctenular ulcerations of the cornea, and may with care be used with advantage in treating tuberculosis of the peritoneum.

7. A dose which has apparently done harm may ultimately do good if the injections be stopped.

8. It should be remembered that each dose is an experiment and the patient must be carefully watched; whilst giving it, the temperature must be carefully taken in the rectum.

9. The local reaction, only properly appreciated when injections are given in a site such as the back of the forearm, should be carefully watched; when present, it indicates in the absence of a general reaction that the tuberculin is doing good, but indicates also that care must be used or a reaction may occur.—I am, etc.,

Ayrshire Sanatorium, New Cumnock, July 6th. EDWARD L. PREST.

NOTIFICATION STATISTICS OF TUBERCULOSIS.

SIR,—The statistics of tuberculosis quoted on p. 15 of your last issue, by comparing the year 1912 with 1917, are somewhat misleading, and give rise to the appearance of a decline in the incidence of the disease which is not justified.

In 1912, the first year of general notification, there were notified all the old cases of the previous year or so, giving a large number in excess of primary new cases notified. This gradually righted itself in 1913 and 1914, and the level attained which has held good since.

To compare 1912 with 1917 is therefore useless as a standard of comparison, and the decline you mention is fallacious.—I am, etc.,

London, S.E., July 9th. HORACE WILSON.

NEPHROTOMY IN THE TREATMENT OF SUPPRESSION OF THE URINE.

SIR,—I was much interested in the article in your issue of July 6th by Mr. Clifford White, because it revived old memories.

I believe the first to advocate and practise the treatment of suppression of urine by incision of the capsule of the kidney was the late Mr. Reginald Harrison. In the *Lancet*, January 4th, 1896, he published a paper entitled "A contribution to the study of some forms of albuminuria associated with kidney tension and their treatment." Afterwards I showed that once the tension within the capsule was sufficient to cause collapse of the veins, then the arterial pressure quickly raised the tension sufficiently to stop all secretion of urine. About that time Mr. Paul operated on a couple of cases for me, and it was marvellous how quickly the secretion of urine was re-established once the tension was relieved. In one case of calculus in the kidney there was complete suppression of urine for three days.—I am, etc.,

Liverpool, July 9th. JAMES BARR.

THE ABUSE OF DRAINAGE TUBES.

SIR,—Under the above heading Dr. Frank Hathaway published an article in your issue of June 29th. Discussing the abuse of a thing implies the admission that there is a use for it, but Dr. Hathaway says: "If surgeons will give up the use of drainage tubes, they will not only find their results very much better, but they will find their outlook on surgery totally changed." Then again: "It is interesting to note the steps by which I gave up the use of 'drainage tubes' once for all."

Now when a man goes to one extreme it is reasonable to assume that he previously went to the other; and I suspect Dr. Hathaway has been using drainage tubes with as little discrimination as he now shows in discarding them.

Drainage tubes are employed for two purposes—to let out discharges and to keep down pressure. The virulence of organisms (as shown by inoculation experiments) greatly increases under pressure, as in such closed cavities as the middle ear or sealed appendix. Drainage tubes have therefore been used by experienced surgeons in what they consider suitable cases for a generation; but after "the experience of six months' civil surgery, since my return from France," Dr. Hathaway is now sewing up practically everything. The conclusion after another six months will, it is to be hoped, not make Dr. Hathaway as enthusiastic in restoring the drainage tube as he is now in discarding it. As medical men we are always at one extreme or the other—bleeding every one or refusing to bleed anybody; indifferent to fresh air or mad about it; careless when operating or sterilizing our fingers for five minutes before removing haemorrhoids; and now our methods with the drainage tube must not be modified—a fault has been found, no good can be admitted.

Cases of empyema Dr. Hathaway now completely closes. Within the last week I have seen an empyema close, and it did not take long to require well opening again, and the aid of a rubber tube.

Dr. Hathaway gives preference to "passage tubes of folded rubber" if a passage is required to be kept open, because "this allows pus to come away, but will not leave an open drain by which secondary infection of staphylococci from the skin or other organs can gain entrance." One might as well say that a candle-wick could not feed a flame because it is not an open pipe. The soft folded rubber is probably less irritating to the surrounding tissues, and remains easier in place, but as a carrier inwards of infection there are good grounds for supposing it would beat a rubber tube hollow.

Dr. Hathaway appears particularly satisfied with his treatment of a big hole in the tibia, after compound fracture. He filled the hole with thymol wax, and performed a secondary suture, and "the wound at once healed." That is likely, but the hole in the bone, filled with a foreign insoluble body like wax, probably remains until this day, leaving a weakness in the bone. The old surgeons, with their drainage tubes, would not have been satisfied with wax instead of bony tissue in that hole.

I am myself no enthusiast for drainage tubes, and use them as little and for as short a time as possible; but they have their uses as well as their limits, as I think Dr. Hathaway will rediscover.—I am, etc.,

Clyst St. George, Devon, July 3rd. D. W. SAMWAYS.

SIR,—Dr. F. Hathaway speaks (p. 719) of filling holes in bones, and, apparently, gaps in long bones, with "thymol wax"; but what happens subsequently? Such a substance, I take it, is not removed by absorption or phagocytosis, and how does it affect the formation of new bone? Would not an autograft of fat do better? Information on these points would be valuable.—I am, etc.,

G. R.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following medical degrees have been conferred:

M.D.—*Norman F. Hallows.
M.B.—William V. Robinson, Sidney C. Dyke, Eustace H. Cluver, Eric A. Woods, *John J. Savage, Kenneth F. D. Waters, *Charles H. Barber, Thomas Patterson.

* In absence.

UNIVERSITY OF EDINBURGH.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—S. Boodoosingh, J. A. L. Cook, G. W. C. Dunlop, L. C. D. Hermitte, F. Holmes, J. T. Johnston, J. B. Liggins, G. H. Middleton, A. J. Myburgh, U. G. Williams.

UNIVERSITY OF ABERDEEN.

THE following candidates have been approved at the Final Professional examinations:

J. Alexander, T. W. Buchan, W. A. Coutts, *J. A. Dawson, *A. Dugan, †G. S. Escoffery, Isabella Ferguson, A. C. Hill, Mabel G. Lawson, R. D. Lockhart, J. W. Mann, J. Morrison, A. C. Paterson, J. A. Ross, J. C. Sleigh, Sophia K. G. Stuart, Gwendolen J. E. Wilson.

* With distinction. † With much distinction.

ANNUAL ELECTION AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE annual election of the Fellows on the Council was held on Thursday, July 4th. The President, Sir George Makins, G.C.M.G., declared the poll open at 2.30 p.m.; 620 Fellows voted by paper and 5 in person. The result was as follows:

Candidates.	Votes.	Plumpers.
SIR J. BLAND-SUTTON	410	37
MR. WALTER G. SPENCER	322	9
MR. ERNEST W. HEY GROVES	307	25
MR. JOHN LYNN THOMAS	266	14
Mr. Francis J. Steward	229	54
Mr. Harold Barr Grimsdale	185	28

The President declared Sir John Bland-Sutton and Mr. Walter Spencer duly re-elected, and Mr. Hey Groves and Mr. Lynn Thomas duly elected to fill the vacancies caused by the retirement of Sir Watson Cheyne and Mr. Bilton Pollard.

The lamented death of Mr. L. A. Dunn having occurred after the issue of the voting papers, the consequent vacancy will not be filled up until next year's election.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT a meeting of the President and Fellows, held on Friday, July 5th, 1918, Major-General Charles Henry Burtchaell, C.B., C.M.G., Officer of the Legion of Honour, Director-General Army Medical Services, B.E.F., France, M.B. University of Dublin, 1889, was unanimously elected an Honorary Fellow of the College.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

FINAL PROFESSIONAL EXAMINATION.—S. Healy (with honours). T. L. Dolan, C. Hennessy, C. R. Kidd, R. G. J. McCullagh, D. B. McEniry, M. R. Morris, M. C. Myerson, F. J. Ryan.

Obituary.

SIR ACHESON MacCULLAGH, M.D.,

Medical Inspector, Local Government Board, Ireland.

WE regret to announce the sudden death of Sir Acheson MacCullagh, M.D., which occurred while engaged on his official duties in Roscommon on July 3rd. James Acheson MacCullagh, who was born in Dublin in 1854, was a distinguished graduate of Trinity College, and subsequently occupied the post of house-surgeon in the Meath Hospital. He was afterwards appointed dispensary medical officer and medical officer of health in Londonderry, where his faithful and efficient discharge of duty was early recognized, and he became one of the leading medical men in the city. He was thrice elected Mayor of the city. His notable record both as an official and as a citizen marked him out for advancement, and the Local Government Board offered him the appointment of medical inspector in June, 1898. No part of Ireland makes greater demands on the energy and character of a medical inspector than the Western District, which was assigned to him; it is subject to recurring outbreaks of typhus and enteric fever, though now happily to a much diminished extent. Working under such circumstances among a population of primitive ideas and habits, with sparse hospital facilities and undeveloped means of transit, and often cut off from ready communication with head quarters, a medical inspector needs to exhibit exceptional qualities of decision and resource. He received the honour of knighthood in 1896.

Sir Acheson MacCullagh in his long career was frequently called on to deal with epidemics of enteric and typhus fever under these conditions, and never failed to acquit himself with distinction. On one occasion in a remote island he had in face of a local panic to render personal assistance in removing typhus patients from their homes among the rocks and heather to the building which was fitted up as an emergency hospital. For his eminent services in this instance he was awarded the Order of St. John of Jerusalem. He could always be relied on to deal with a difficult situation with promptitude and sound judgement, and to his zeal and activity may be attributed the comparative immunity from serious outbreaks of fever which the districts along the Atlantic seaboard have enjoyed in recent years. Although often called on to act with firmness, he succeeded in retaining the goodwill and support of the local authorities and officers with whom he was brought in contact. His long experience of typhus fever was constantly appealed to by medical officers in cases in which the diagnosis was obscure. As a colleague he was one who never sought to spare himself trouble, and his opinion always carried weight. The public service has suffered a grave loss through his untimely demise.

THE death occurred on May 31st, in his 83rd year, of GEORGE WILLIAM FLEETWOOD BURY, one of the oldest Fellows of the Royal College of Surgeons. He came of a very old West country family, long associated with Colyton in South Devon. He studied medicine at St. Thomas's and the Middlesex Hospitals, and in Dublin, and obtained the diplomas M.R.C.S. and L.S.A. in 1856. He took the F.R.C.S.Eng. in December, 1860, on attaining the age of 25, having previously passed the final examination. After serving as house-surgeon and resident medical officer at the Middlesex Hospital, he practised for some time near Barnet. He retired from active work more than thirty years ago, and went to live at Chew Magna in Somerset, where he spent much of his time in gardening. Mr. Fleetwood Bury was a sound and successful practitioner. In retirement he was always pleased to assist his professional brethren in the neighbourhood, and his powers of mind remained to the end.

Medical News.

PROFESSOR SIR EDWARD SCHAFER wishes it to be known that he is adopting the name of Sharpey before the surname of Schafer.

ONE of the features of the garden party at the Royal Botanic Gardens next Tuesday afternoon in aid of the Training Fund of the Royal Medical Benevolent Fund Guild will be the sale of gifts. Gifts may be sent to Lady Tweedy, 100, Harley Street, W.1, and anything from matches upwards will be welcomed. Names and addresses and descriptions will add to the interest of the articles.

CAPTAIN J. G. THOMSON, R.A.M.C., Protozoologist to the London School of Tropical Medicine, has returned from Egypt to do special research work on malaria with Sir Ronald Ross.

DR. J. N. LANGLEY, F.R.S., Professor of Physiology in the University of Cambridge, has been elected a foreign member of the Royal Academy dei Lincei, Rome.

WE are informed that a few cases of influenza can be received at the London Fever Hospital, Liverpool Road, N.

AT a recent meeting of the Crieff Parish Council a letter was received from Dr. James Gairdner, thanking the council for their congratulations on the attainment of his jubilee as medical officer. The council unanimously agreed to grant Dr. Gairdner a war bonus of £10 per annum.

UNDER the auspices of the London County Council, lectures on the care of mother and child, with special reference to the work of midwives, are being given at Birkbeck College, Fetter Lane, E.C., and at Morley College, Waterloo Road, by Dr. F. Truby King, C.M.G. (founder of the Royal New Zealand Society for the Health of Women and Children; Medical Director of the Babies of the Empire Mothercraft Training Centre, London).

AT the annual meeting of the Medico-Psychological Association of Great Britain and Ireland at the Royal College of Physicians, Edinburgh, on July 23rd, Dr. W. Ford Robertson will read a paper on the infective factors of some types of neurasthenia, and Dr. Claud Fothergill on the prevention and the treatment of the condition. On July 24th a meeting will be held at the Edinburgh War Hospital, Bangour, when various demonstrations will be given.

A SUPPLEMENT to the July number of the *London Hospital Gazette* contains the names of more than 1,200 past and present students who are serving or who have served during the present war in H.M. Forces. Of these, 80 have been killed or died of wounds, 32 have been awarded the D.S.O., 3 the D.S.C., and 95 the M.C.; 4 have been awarded a bar to the Military Cross and one has received a second bar.

THE Board of Trade desire to point out that the standard uniform for the mercantile marine recommended by the committee, whose report was recently issued as a Parliamentary Paper, Cd. 9030, has not yet been officially authorized. If, and when, an Act of Parliament is passed giving statutory authority for the uniform, there will be an alteration in the rank stripes proposed by the committee for ship surgeons and pursers, to differentiate them from the stripes of naval medical and accountant officers; and, to effect this, it is proposed to insert a diamond in ship surgeons' and pursers' stripes, as in the case of the stripes recommended by the committee for chief, second, and third officers.

THE Home Secretary gives notice that the definition of "cocaine" in Defence of the Realm Regulation 40 B (which regulates dealings in cocaine and opium), and in the Proclamation prohibiting the importation of cocaine, has been further amended so as to include ecgonine, its salts and derivatives (see BRITISH MEDICAL JOURNAL, November 17th, 1917, p. 657). The definition now reads as follows: "Cocaine includes ecgonine, and any substance, whether preparation, admixture, extract or otherwise, containing 0.1 per cent. (one part in a thousand) or more of cocaine or ecgonine, or of any salt or derivative thereof."

MEDICAL practitioners are reminded that their motor spirit licences expire on August 1st. A form of application appears inside the cover of every licence, which should be filled in and forwarded *together with the licence itself* to the Secretary of the Petrol Control Department, 19, Berkeley Street, London, W., not later than the end of the third week of July if a further licence is required at the commencement of the following month. Other instructions relating to the issue of a further licence are given on the first page of the existing licence, and strict compliance with the necessary conditions will avoid delay. It is also desirable that correspondence relating to matters in connexion with the actual issue of the licence should as far as possible be deferred until the new licence is received.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

QUERIES AND ANSWERS.

ACIDOSIS.

G. R. writes: How is a condition of acidosis diagnosed, and what does it mean exactly? I was always under the impression that it meant a lessened alkalinity of the plasma, and was diagnosable by the presence of β-oxybutyric acid, diacetic acid, and acetone in the urine; but when I happened to remark this to a physiologist recently he laughed the idea to scorn, and launched forth into a long dissertation altogether too technical for me to follow.

LETTERS NOTES, ETC.

"STUDY PERIODS."

DR. F. J. MCCANN (London, W.) writes: In the report of the deputation to the Secretary of State for India I notice that Sir Clifford Allbutt suggests the phrase "study periods" instead of "study leave." It is in a spirit of humility that I venture to criticize the phrase of one who wields such a graceful pen, but it seems to me that "study duty" most appropriately implies what is really intended. In military parlance, one speaks of sentry duty, garrison duty, etc. The comic man in the services might extract fun out of the unfortunate officers who were having their "study periods."

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

ANOTHER OLD MEMBER writes: I am not surprised that week by week you are receiving protests from the old members of the Medical Sickness Society with regard to the unwise and unfair policy of discontinuing the bonus due to members on reaching the age of 65, or to their representatives in case of death. The society is a friendly society; the funds belong to the members; therefore a postal vote should have been taken with regard to the continuance of the so-called "bonus," since comparatively few members can attend the annual meeting. The society's income has always exceeded the expenditure, and the interest on the invested capital is so large and constantly increasing that if the bonus is done away with the premium for a succeeding generation will be almost unnecessary. A workman's friendly society considers itself well off with funds representing £5 per member, although these societies pay a death benefit and do not turn out their old members at the age of 65. I do not mean to suggest that the Medical Sickness Society is badly managed, but the committee err rather on the side of too much caution.

EXAMINATION OF THE HEART IN RECRUITS.

A. B., writing from experience of examining recruits for several years, sends the following notes which he thinks may be useful to medical examiners new to the work:

If the apex is in normal position, bruits may generally be discounted.

If the apex is in the nipple line or outside, and there is a pronounced impulse with dull percussion note between the apex and sternum, hypertrophy is present. Horizontal hearts may be mistaken for hypertrophied; "screening" will decide.

A bruit at the apex conducted outwards and heard both when the man is lying and standing denotes mitral insufficiency; should a bruit be only heard on standing it is probably exocardial.

A localized bruit inside the nipple with the character of a "purr," namely, a few short notes preceding a long (the first beat) denotes mitral stenosis. When the second sound is accentuated the urine should be tested for albumin.

A bruit heard in the aortic area systolic in time denotes in a small percentage of cases aortic stenosis; much more frequently it is haemic, or due to a roughening of the semilunar valves.

An aortic diastolic murmur accompanied by a heaving impulse outside the nipple line, visible pulsation of the arteries of the neck, and water hammer pulse denote aortic insufficiency.

When the heart sounds are distant and the pulse (often rapid) at the wrist disappears when suddenly elevated above the head, myocardial weakness is present; this may be toxic or due to myocardial degeneration *plus* a toxic condition. In either case a soft bruit may be heard at the apex.

PASSAGE OF SPOON BY THE BOWEL.

DR. T. REUELL ATKINSON (Chadwell Heath, Essex) writes: Early in April I was visiting an old man, over 70, suffering from chronic bronchitis. He told me he had swallowed a teaspoon. Though I did not believe him, I thought it best to have him removed to the infirmary. After about a month, and without having suffered from pain or inconvenience, he one day passed the spoon during an evacuation of the bowels.

ERRATUM.

IN the JOURNAL for July 6th, p. 16, column 1, line 12, for "with an evidence" read "without any evidence."

THE appointment of certifying factory surgeon for Aberdare (Glamorgan) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	6	0
Each additional line	0	0	9
Whole single column	4	0	0
Whole page	12	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.